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ABSTRACT

The purpose of this study was to investigate teaching within the framework of the philosophical social action theory developed by Professor Tuomela in order to argue for the claim that teaching is a social concept. The outcome is likely to have important implications for the development of theories about factual and conceptual phenomena within pedagogy. The joint action of teaching performed by the teacher and pupil was analyzed in the purposive-causal theory. The most important means of analysis was the action language and the concepts connected with it: intentionality and we-intentions. The particular theses argued for were: (1) the concept of teaching requires the concept of learning as an action, not as a learning outcome; (2) the concept of we-intention is needed to account for the joint action of the teacher and the pupil. Part of the analysis involved going through the conceptions of teaching in the educational literature and clarifying misconceptions. In particular, teaching was viewed in terms of the collective acting jointly and in terms of modes of teaching. In institutionalized teaching, the jointness of the teaching action prevails between the teacher and each pupil separately, that is, the pupils' component actions are not dependent on each other's actions. As for the we-intention, additional conditions can be set for the concept in the case of instruction and indoctrination. (Author)

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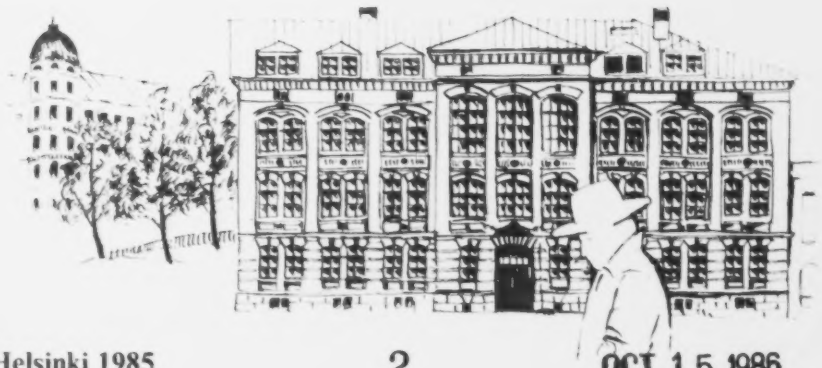
RESEARCH REPORT 36

Department of Teacher Education
University of Helsinki

Paul Hellgren

TEACHING — A SOCIAL CONCEPT



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Department of Teacher Education, University of Helsinki
Ratakatu 2, SF-00120 Helsinki, Finland

Paul Hellgren

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Abstract

The purpose of this study was to investigate teaching within the framework of the philosophical social action theory developed by Professor Tuomela in order to argue for the claim that teaching is a social concept. The outcome is likely to have important implications for the development of theories about factual and conceptual phenomena within pedagogy.

The joint action of teaching performed by the teacher and the pupil was analyzed in the purposive-causal theory. The most important means of analysis was the action language and the concepts connected with it: intentionality and we-intentions. The particular theses argued for were: (i) the concept of teaching requires the concept of learning as an action, not as a learning outcome, (ii) the concept of we-intention is needed to account for the joint action of the teacher and the pupil. Part of the analysis involved going through the conceptions of teaching in the educational literature and clarifying misconceptions. In particular, teaching was viewed in terms of the collective acting jointly and in terms of modes of teaching. In institutionalized teaching, the jointness of the teaching action prevails between the teacher and each pupil separately, that is, the pupils' component actions are not dependent on each other's actions. As for the we-intention, additional conditions can be set for the concept in the case of instruction and indoctrination.

Keywords: teaching, learning, action, social action, intentionality, we-intention, concept

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Tiivistelmä

Tarkoituksena oli tutkia opettamista ja perustella sitä sosiaalisena käsitteenä. Viitekehyksenä käytettiin professori Tuomelan kehittelemää sosiaalisen toiminnan filosofista teoriaa. Analyysin tuloksien oletetaan vaikuttavan merkittävästi didaktiikassa kehiteltäviin teorioihin, koskivatpa ne faktuaalisia tai käsitteellisiä ilmiöitä.

Opettajan ja oppilaan suorittamia yhteistekoja eriteltiin purposiiviskausaalisen teorian mukaisesti. Tärkeimmät analyysimenetelmät olivat toiminnan kieli ja siihen liittyvät käsitteet: intentionaalisuus ja me-intentiot. Erityisesti argumentoitiin seuraavia seikkoja: (1) opettamisen käsite vaatii oppimisen käsitteen toimintana, ei oppimistuloksena, (2) tarvitaan me-aikomus (me-intentio) selittämään opettajan ja oppilaan yhteistä tekoa.

Tutkimuksessa eriteltiin kasvatustieteellisessä kirjallisuudessa esiintyneitä opettamisen käsityksiä ja selviteltiin sekaannuksia. Opettamista tarkasteltiin erityisesti yhdessä toimimisen ja opettamisen muotojen kannalta. Havaittiin, että luokkaopetuksessa käsitteellinen yhteys yhteisessä teossa vallitsee opettajan ja kunkin oppilaan välillä erikseen, s.o. oppilaiden osateot eivät ole riippuvia toisistaan. Me-aikomuksen käsitteen määrittelyltä täytyy vaatia lisäehtoja, jos opettamisen muodoista halutaan erottaa tosiasiallisen tiedon tai näyttöön perustuvan tiedon esittämistavat (instruction) ja indoktrinaatio.

Avainsanat: opettaminen, oppiminen, toiminta (teko), yhteistoiminta (-teko), sosiaalinen toiminta, intentionaalisuus, me-aikomus

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1. Introducing the subject

This study is an attempt to make a philosophical analysis of teaching. The aim is to view teaching within the framework of the philosophical social action theory developed by Professor Tuomela. There is a mass of philosophical literature on teaching and learning, but the present endeavour is aimed at elaborating a concept of teaching which is theoretically sound and which may be made use of in constructing empirical theories of teaching. Application is not the primary goal, but attention is focussed on teaching in practice rather than on the semantical meaning of 'teaching'.

A vast body of literature deals with the different meanings of the terms 'education' and 'teaching'. It does not, however, appear to open up new paths for the development of theories of teaching, because it relies so heavily on the semantical analysis of English usage. Why should educational concepts be confined to usage in the English language? Is it not possible that they can have something of a more universal character as scientific concepts? It is a truism that words have many meanings and nuances. Part of the meanings may be restricted in range and depend on a particular context. Many such differences are more or less casual and occasional in the sense that they have connotations which are not unanimously accepted and agreed upon. For the use of educational research such concepts are too hazardous. There is a great need of concepts that denote educational phenomena in a way that can serve as theoretical concepts for research. Otherwise, we have to content ourselves with *ad hoc* solutions of forming operational and stipulative definitions.

Though philosophical analyses seldom provide us with concepts that are directly applicable to empirical sciences, such conceptual analyses elucidate and clarify concepts in a fashion that is profitable for the theoretical development of empirical research. By contrast, J. Wilson (1979, 17, 34) is concerned solely with how contemporary English-speakers normally use certain terms. In that sense, concepts are analyzed to find the range of meaning, or rules governing the use of the terms. He seems to warn us against philosophical analyses that may lead to semi-technical terms that no longer appear to have a normal use at all. My aim is not to find technical terms but rather, using perhaps little technical apparatus, to elucidate the concept of teaching. The purpose is not to introduce into English new words with technical meanings but to facilitate theoretical development in educational research.

2. Approaches to analyzing teaching

There have been several attempts to determine the conditions of teaching (e.g. Hirst 1971, McClelland 1976) in order to define the concept. Hart (1976) takes a negative view of such analyses because they try to dissociate the two questions 'What is teaching?' and 'What is good teaching?' from each other. He argues that the attempt to provide a neutral, descriptive analysis will be unsuccessful because "*any* search for the defining conditions of teaching is bound inevitably to reflect the searcher's presuppositions about what is *educationally* important and about what really matters in teaching." I think Hart is basically right in his claim, because the methods by which teaching is performed are connected with the concept. This will become clear in the course of the analysis in this study. Nevertheless, I am not certain that the question of the contents as reflected in the aims of teaching should be part of the definition of teaching. Such a view is indirectly implied by the claim that educationally important matters are involved in the analysis of the concept of teaching.

Kerr (1981) enumerates many reasons why we have no theory of teaching. One of them is that we have misconstrued theories of phenomena related to teaching as theories of teaching. When we wish to predict learning outcomes for people who have obtained special treatments on the basis of the corresponding constructs we rely on theories of phenomena. Such are not theories of teaching since they presuppose theories of teaching. Another reason can be found in the mistaken belief that a theory of teaching can be reduced to a theory of learning or that a theory of teaching can be elaborated from a theory of learning. The third reason arises from confounding theories of empirical phenomena with theories of practice. O'Connor (1973) claims that "'theory' as it is used in educational contexts is generally a courtesy title" (p.48), because it is not "a logically interconnected set of hypotheses confirmed by observation" with "the further properties of being both refutable and explanatory." (p. 50). Hirst (1973) again argues that as a theory of practice a theory of education must specify adequate reasons for actions. Hirst wishes to say that a theory of teaching must be qualitatively different from a theory of empirical phenomena, inasmuch as a practice is qualitatively different from phenomena (p. 67 and *passim*). Kerr (1981) argues that much as the adequacy of any theory of phenomena can in part be evaluated by appeal to a theory of (empirical) knowledge, so a theory of practice must in part be judged by a theory of action. As for a theory of teaching, one looks to a theory of action rather than to a theory of empirical phenomena to develop a theory of teaching.

When we try to describe teaching and teaching events we need a

language in which the concept of teaching can be expressed. Kerr (1981) suggests three sorts of such conceptual sets or frameworks: metaphorical language, behavioural language, and action language. Metaphorical language is, however, too vague for the analytical development of theories. The choice between behavioural language and action language is not too difficult. The former language allows for observable events only, but denies mental events which cannot be observed and which do not expose themselves to sense perception. Action language, instead, can also talk of such events as thinking, planning, decision-making for reasons. Behavioural language in the form of behaviourism has been convincingly shown to be wrong, so we can abandon it.

Kerr (1981) argues convincingly that behavioural language is capable of describing teaching as behaviour, and thus teaching can be predicted only from patterns of behaviour and not of persons as agents with intentions. Since we are interested in theory of teaching as a theory of action, only action language is appropriate here. That also enables us to make use of intentionality and to label events as teaching events when they involve someone engaged in helping someone learn something.

In outlining the different senses of 'educate' and 'education', J. Wilson (1979, 19) draws a distinction between something that a child or adult picks up naturally, and learning that is difficult to describe but could be clarified by such a phrase as 'above the level of nature'. To count as education, the learning must satisfy the condition of being 'above the level of nature'. From this condition it is not surprising to infer another condition that the enterprise of educating has to satisfy: roughly, that it should be something done intentionally or deliberately. This then involves some discussion of the links between education and (a) a certain kind of intention, (b) a certain kind of result. The issue will be about whether each is (i) a necessary or (ii) a sufficient condition for the application of the term.

J. Wilson uses the term 'educate', but I do not think it matters much in this case because its sense here refers in practice to teaching. Wilson himself is not very analytical about 'intention' and 'result', but he seems to have in mind 'intention to educate' as an end, and 'result' as a learning outcome. Fundamentally, he regards intentionality as a necessary but not a sufficient condition for learning. Intentionality needs a more detailed analysis and elucidation in terms of teaching and learning. That cannot, however, be done without making a digression into the language of action theories, during which intentionality may be clarified.

2.1. The problems of this study

The issues that I wish to study and discuss can be specified as follows. How can teaching be characterized in terms of a joint action, i.e. how is teaching possible as a social action? To analyze social actions we need the concept of intentionality, and through it I attempt to view teaching as a multi-agent action, i.e. as an action which several agents perform together. The ultimate goal of the study is to lay grounds for the thesis that teaching is a social concept. If the attempt is successful, the conclusion will also have relevance to research and practice in the field of pedagogy and education.

The particular theses that I wish to argue for are: (i) For the concept of teaching it is necessary to take both teaching and learning into account. (ii) Learning as an outcome cannot be a necessary condition for the concept of teaching. (iii) Not only teaching but also learning must be described in action language. (iv) A concept that we need for describing the jointness of an action performed by several agents is we-intention so that teaching can be studied in terms of that concept. (v) If teaching is based on social action concepts, teaching can in fact be considered to constitute a social concept.

The concept of we-intention is central to Tuomela's social action theory, so I shall pay a particular attention to that concept in my analysis. Therefore, this study can be regarded as an application of that concept to teaching. My purpose is to investigate whether some further conditions and elaboration are required for the definition of we-intention within the field of teaching. To obtain the relevant means of analysis, I shall first present how actions are described in action language and then outline some action theories in order to place my argumentation in a larger theoretical framework.

3. Action theories

3.1. Three main categories of action theories

The supposition that an agent's reasons for acting as he did were causes of his action has long prevailed in philosophical literature. As long as it was thought that there is a knockdown argument to show that reasons are not causes, there was no need to provide a positive account of what that link might be. As soon as doubts arose, the issue began to take on crucial importance. (G. Wilson 1980, 7-8.) One of the most influential attacks on the problem was Donald Davidson's article, "Actions, Reasons, and Causes" (1963), in which he raises the question: If an agent does so-and-so *because* he has certain reasons, and if the

explanatory link between action and reasons cannot be causal, then what on earth could it conceivably be? Various answers have been offered, but no definite alternative has become prevalent so far.

A number of philosophers maintain that the concept of 'performing an action' is analytically tied to the concept of 'intention'. Thus an action can be contrasted with a mere item of behaviour. This view has also led to the claim that intention is logically crucial to the special character of reason explanations. But, there will arise a problem about the properties of the verb 'intend'. To put it roughly, an item of behaviour is held to be an action if it exhibits a kind of intentionality: desires, volitions, goals, etc. There are, however, distinctions to be drawn between intention, desire, volition, and so on. Different choices between them result in different analyses and theories about action.

Miss Anscombe (1958) remarks,"Very often, when a man says, 'I am going to do such-and-such,' we should say that this was an expression of intention. We also sometimes speak of an action as intentional, and we may also ask with what intention the thing was done. In each case, we employ a concept of 'intention'; now if we set out to describe this concept, and took only one of these three kinds of statements as containing our whole topic, we might very likely say things about what 'intention' means which it would be false to say in one of the other cases... We may be inclined to say that 'intention' has a different sense when we speak of a man's intentions *simpliciter* — i.e., what he intends to do - and of his intentions *in* doing or proposing something — what he aims at in it. But in fact, it is implausible to say that the word is equivocal when it occurs in these different cases."

Although we accept that the intuition that a full-blooded action depends on the agent's intentions is sound, it is not easy to describe the nature of that dependence. Various descriptions and interpretations have made their appearance. We may draw a distinction between the concept of 'the intention *with which* the agent acted' and/or the concept of 'the intention the agent had *in* acting' and the relation of these to the notion of 'having an intention for the future' (G. Wilson 1980, 83). Some issues will arise in the attempts to make these various concepts of 'intention' satisfy the conditions of full-blooded action.

Tuomela's outline (1983, ch.3) helps to get a general view of the different action theories. He groups philosophical theories of human action into three classes, primarily on the basis of how they characterize intentional actions. The three classes are: (i) mental cause theory, (ii) agency theory, and (iii) hermeneutic theory. The mental cause theory analyzes intentional actions as bodily movements caused by certain kinds of mental events or states, such as wants or volitions. According to the agency theory, the cause of the behaviour that is involved in the action (the behavioural component of the action) is simply the agent

himself and no further cause is needed. The hermeneutic theory could also be called the *non-causal* theory or the Wittgensteinian theory. According to it, intentional actions are not, and perhaps logically cannot be, caused by any mental events or states. An action somehow consists in or involves some bodily movements by which the agent *intends* or *means* or *aims at* something and/or that the movement, accordingly, is something which is to be conceived in the context of some "meanings", rules, norms or social practices. Action explanations are explanations in terms of the agents' reasons, and reason-explanations are *sui generis*, and thus not reducible to, e.g., causal ones.

In the concept of action it is possible to distinguish the result of action on the one hand, and a consequence of action on the other. The result of an action is an end event or state of that action without which the action does not logically exist. (cf. von Wright 1971, 67). Events or states which are generated but not logically presupposed by actions are called consequences. For example, in opening the window, the result of the action is that the window becomes open. But if in the window being opened, a mosquito flies in, the event is called a consequence of the action. When actions are thought of as achievements with certain public aspects, any action will have a logically built-in result. Also, it will have several consequences. Although this distinction seems fairly clear, it is not unproblematic, and therefore, every action theory may be supposed to characterize the two notions in its own way.

A further distinction is relevant in an analysis of intentional actions. We may talk of the intrinsic and the extrinsic aim (purpose, intention, end) of an action. 'Intrinsic aim' denotes the teleology internal to our understanding of actions whereas 'extrinsic aim' denotes the external teleology in terms of which actions can be explained. As an example Tuomela gives a situation in which I unreflectively pass the salt to my dinner companion, out of politeness and without any further motive or aim. Such an action has no extrinsic aim, but yet an intrinsic aim, namely my bringing it about that the salt reach my companion. In sum, every intentional action has an intrinsic aim, the terminating event of which is just the result of the action. Nevertheless, not every intentional singular action has an extrinsic aim, but only those have whose explanation requires a reference to the intention with which the agent acted. (Tuomela 1983, ch 3.)

In order to understand how an intentional action is analyzed in the different theories of action, let us see how they describe an intentional action. I shall rely on Tuomela's analysis. Although there are differences in technical details, a sketchy outline of "standard" versions of the different theories will help to understand the essentials of the different views on intentional actions. In the mental cause theory, the following characterization states what it is for a presystematically understood

singular action u, with a singular result event r, to be an intentional action of some kind, say X:

(MC) An agent performed an *intentional action* u if and only if
(1) the result r of u occurred because of the agent's behaviour (bodily movements) involved in the action u;
(2) there was some end the agent wanted to realize and which he believed his behaviour (of the type believed by him b exemplified) would (tend to) bring about or at least be conducive to; and
(3) this want and belief together caused the behaviour in u to occur.

On (MC), the explanation of the action, in a sense, goes together with the explanation of the behaviour in the action, as clause (3) indicates. To say that an agent is opening a window (performing X) is to say that his behaviour in the action is caused by his wanting some end (action type) to which he believes his behaviour (of the type b exemplifies in his opinion) is conducive. Though this attribution of action gives an explanation of the behaviour, it does not, however, give an explanation of the action. This can be done by specifying the agent's want. For example, when we learn that the agent wanted to let in some fresh air we get an explanation of the action.

On (MC), (a) the internal teleology of actions is analyzed in terms of causality, since the intrinsic aim in the action is construed as the content of the agent's causally active want, viz., his aim to bring about the result. Furthermore, (b) the external teleology of actions is analyzed causally. But as Tuomela points out, these claims are too strong. The first claim (a) reduces the concept of intentionality to the concept of causality. If only mere event-causation is meant, (b) is affected by the existence of so-called wayward causal chains, which also serve to provide a direct counterexample to (MC).

To understand what a wayward causal chain is, let us look at the example given by Tuomela and adopted from Chisholm (1966): (i) A man wants to kill his uncle; (ii) he believes that if he drives over his uncle he kill him ; (iii) and this desire and this belief agitate him so severely that he accidentally drives over and kills a pedestrian who, unknown to the nephew, is none other than the uncle. The agent did not intentionally drive over his uncle, even though conditions (1)-(3) of (MC) can be regarded as satisfied. Tuomela considers the problem of wayward causal chains particularly fatal for (MC). A better account may be given in terms of suitable mental causation which involves conation. It will be discussed later.

The second type of action theories is agency theory. Tuomela regards

Taylor (1966) and Chisholm (1966) as the most prominent advocates of the agency theory in recent years and puts their basic idea as follows:

(A) An agent performed an *intentional action* u if and only if
- (1) the result r of u occurred because of his behaviour in u;
- (2) the agent aimed at (or intended) performing an action with a result of the type r instantiates; and
- (3) his behaviour in u was caused by the agent himself in aiming at performing an action with a result of the type r instantiates.

The agency theory does not only involve agent causality but also event causality. Agent causality is a teleological notion, for it operates in the agent's aiming at an end. The intrinsic aim in the action is just that specified by clause (2). In the analysis of the agency theory, the agent's action is explained by his behaviour. However, the attribution of the behaviour to the agent, in effect, explains only his behaviour, but not his action. Attributing an action to an agent implies that he is aiming at bringing about a result. But in answering a why-question in explanation, we refer to reasons why the agent aimed at the action with the result in question. Thus such questions call for a specification of extrinsic aims. So, a teleological explanation involving some relevant goal is taken to explain the action. Worth noting about the agency theory is the fact that it denies the reducibility of a teleological explanation to a causal one. As we see, the intrinsic and the extrinsic aim of the action are involved in the teleology of agent causality.

The hermeneutic theory of action is less unified than the other two theories cited above. Nevertheless, Tuomela (1983, ch. 3) finds two features common to hermeneutic theories. First, Humean event causality is given no role in the analysis of intentional action. Second, conceptualization and understanding of behaviour is emphasized, i.e., the agent's wants, intentions, beliefs are read off from his behaviour, which then is understood and classified as a certain kind of action. By specifying a further reason that the agent had in mind, one can explain and understand the action.

The most prominent hermeneutic theory is presented by von Wright (1971). The most essential thing in his theory is that the agent aims by his (bodily) behaviour at bringing about a certain result. This is to say that the agent intends or means by his behaviour a certain end. So, von Wright's analysis of intentional action may be given as follows:

(H) An agent performed an *intentional action* u if and only if
- (1) the result r of u occurred because of the agent's behaviour in u, and
- (2) the agent by his behaviour aimed at bringing about a result of the type r instantiates. (Tuomela 1983, ch. 3.)

In this theory, the intrinsic aim in the action refers to the intentionality of the agent's behaviour (clause (2)), i.e., the agent's intending or meaning something by his behaviour. As Tuomela points out, the intrinsic aim in the action has both an object and a "vehicle", namely the behaviour. By his behaviour the agent intends an action. Further, we must note that the intentionality of behaviour does not derive from the causal antecedents of the behaviour. Intentionality is in the behaviour, which then is seen as action. Intentional behaviour can be parallelled to the use of language, for an agent aiming at something by his behaviour acts in analogy with a speaker who means something by an utterance.

Although on scheme (H), the bodily behaviour is not actually explained, this does not mean that causal explanation is denied. It is only that such an explanation is not intimately connected with (H) or the teleological explanation of the agent's action. According to von Wright's view (1971, 100), an acceptable teleological explanation of action must be "*logically conclusive*", i.e., in the sense of the explanans, in a broad sense, logically entailing the explanandum. He claims that the class of such conclusive teleological explanations coincide with that of explanations given in terms of *practical* syllogisms. The basic form of a (descriptive) practical syllogism is as follows:

(PS) The agent intends to bring about p.
The agent considers that he cannot bring about p unless he performs an action (of the kind) X.
Therefore, the agent sets himself to perform X. (cf. von Wright 1971, 96).

Given then certain qualifications related to so-called normal conditions and time-considerations (PS) can be considered logically conclusive (von Wright 1971, 107). In von Wright's analysis, the action u has already occurred, and the premises of (PS) actually state the agent's reason for his doing u.

In considering the different theories, one has to orient oneself among them and choose one that might serve as a suitable means of analysis. Since causal theories of action go more into details on analysis, that line of thinking is likely to provide us with a serviceable means. I shall use Tuomela's theoretical framework in discussing the intentional action, which makes it of interest to repeat his arguments for the actual presence of a causal connection between proattitudes and the relevant actions.

(1) By utilizing a functional account of the nature of mental phenomena Tuomela (1977) builds causality into mental concepts. Such an account conceptually introduces mental states and events on the basis of social practice as causing behaviour (including actions) in suitable circumstances. Thus, intending that p entails being in a dispositional state with the structure p such that this state in suitable internal and

external circumstances will cause the bodily behaviour which the agent views is needed for the satisfaction of the intention. This is not seen to be open to the traditional criticisms directed against volition theories by Ryle, R. Taylor, Melden.

By a functionalist account, mental events (e.g. wantings, willings) which actualize mental dispositions may act as efficient event causes of behaviour, "while there at the same time is a conceptual ("logical") connection between the concepts representing such dispositions (e.g., intentions), on the one hand, and, on the other hand, both the generic action which ultimately satisfies the intention, and the generic means-actions which are related to the intention via a practical syllogism." (Tuomela 1983, ch. 3.) If this functionalism is accepted, we have a strong argument for the causal theory of action.

(2) If we accept the metaphysical model that a change in a substance produces another change in the same substance, we may also note that changes in some suitable mental states and events may systematically correspond to changes in some relevant actions. Tuomela takes this to indicate causal connection without entailing, however, that the person is not acting freely.

(3) Tuomela (1983) gets a third strong argument for causal connection from the possibility of constructing two different practical syllogisms, with true premises and the same true action description as the conclusion, for one and the same action, but of which only one practical syllogism is explanatory. A true counterfactual statement can only be formed on the basis of this explanatory syllogism: "Had the agent not intended so and so and believed so and so, he would not, ceteris paribus, have performed the action." The truth of the counterfactual statement may be regarded as evidence for a causal connection between the mental episode satisfying the premises and the action satisfying the conclusion.

(4) A related argument is based on a distinction between the mere *rationalization* and the *explanation* of an action. Giving a reason that one has even if one did not act *on* or *because of* that reason is rationalization. However, this will not do in explaining an action, unless the agent acted because of it. Therefore, it is obviously correct to claim that only the explanatory *because of*-relation indicates the presence of a causal connection. This argument seems to be vague. The issues connected with this are dealt with in G. Wilson (1980), where a good critical assessment is given of the present line of argumentation.

(5) The fifth argument deals with the requirement that the inferring person has *internalized* some principles of inference, such as *modus ponens*, before he is capable of inferring properly. Tuomela (1977, ch. 8) argues that this supports the view that in practical inference a causal process takes place.

(6) Contrary to the hermeneutic theory, the causal theories of action in a sense account for the *possibility* of action. This is due to their account of the bodily behaviour involved in the action being causal and non-functionally and non-intentionally described (cf. Tuomela 1977, ch. 8).

(7) In the seventh argument, Tuomela unites what is required of scientific explanation in general with what must be required of action explanations. A central criterion of adequacy is that the explanans should give reasons for expecting the explanandum to be true. The cause-effect relationship is just an explanatory pattern of that type.

Taken together, Tuomela considers the above arguments strong enough for the presence of a causal connection between active mental attitudes and action. On the other hand, there are arguments against mental causal theories. One of the most serious troubles is the problem of wayward causal chains, which also affects the agency cause theory as well as the hermeneutic theory. Another difficulty with the agent theory is its obscure notion of the agent causality itself. As for the hermeneutic theory, Tuomela considers that its most basic difficulty is its lack of a dynamic (e.g. causal) principle accounting for the coming about of action *in rerum natura* and explaining the factual possibility of intentional behaving.

As a consequence of the serious defects of the above action theories, Tuomela has developed a better candidate, which he calls a purposive-causal theory of action and which, according to him, can handle the difficulties that have been shown to exist in mental causal theories. Since our aim is to discuss intentional action in terms of teaching within Tuomela's theoretical framework, the criticism against mental cause theories will be left unhandled. The interested reader may consult Tuomela's presentation of issues, and his references to other sources in his book. Next we shall briefly outline Tuomela's purposive-causal theory in order to understand the role of intentional action in the theory.

3.2. Purposive-causal theory

The purposive-causal theory has been developed for single-agent actions (Tuomela 1977), which may be regarded as a special "intentionalistic" and "conative" version of the mental cause theory. Tuomela extends the single-agent purposive-causal theory to the social case. He develops a social action theory, which is a multi-agent purposive-causal theory and which relies on some central features of the single-agent theory.

By an action Tuomela means a performance, i.e., something an agent or agents bring about so that this something has an epistemically public character. In an account of the notion of action, a reference must be

made to the antecedents and the consequences of the behaviour involved in the action. The antecedents are activated propositional attitudes like wanting (the evaluative or affective component), believing (the doxastic component), and intending (the conative component). The notion of intentional action is intimately linked to intending. As to consequences, only behaviours with certain achievement or result aspects will classify as actions. (Tuomela 1983, ch. 4.)

Intendings, believings and other related propositional attitudes may be functionally characterized as realistically conceived dispositional states which have a certain propositional structure. Conceptually (or semantically) these states are introduced by reference to social conventions and social practice. The introduction of mental states as "theoretical" entities is functional and hence indirect. The inner states are seen to *cause* the agent's relevant behaviour in various circumstances. Thus, intending that p entails being in a dispositional state with the structure p such that this state, given suitable internal and external circumstances, will cause the bodily behaviour which the agent believes is needed for the satisfaction of p, viz. the content of the intention. (Tuomela 1983, ch. 2.)

An agent's wants and beliefs are the most important proximate dispositional determinants of his actions. The wants generate intentions, i.e. states of intending. A want, in a broad sense, is either intrinsic, when something is wanted for its own sake, or extrinsic, when it is related to a duty, an obligation, challenge, etc., which often serves some intrinsic want ultimately. Intentions (intendings) are partly characterized in terms of extrinsic and intrinsic wants. Intendings, as purely conative, are not reducible to wantings, but they may be taken to entail the presence of wantings. Thus, both intrinsic desires and duties, and obligations, together with appropriate beliefs may, and do, generate intentions. In opposition to wants, it is typical of intentions that, if a person intends to do something X, then it must be the case that he believes he can do X (or he can learn to do X), at least with some nonnegligible degree of probability.

As an example, we can cite the following. An agent has formed an intention to illuminate the room. His deliberation leads him — through intention transferral — to form an *intention to flip the switch*. At the moment of flipping, this intention results in a causally effective *willing* by his bodily behaviour to flip the switch then and, in fact, to flip the switch as intended (or willed). A willing is act-relational in that it irreducibly involves reference to bodily action in a *de re* sense. This together with its feedback-sensitive act-controlling character, which is explicable in terms of purposive causation, serves to exclude wayward causal chains, e.g., between the bodily behaviour and the end result. (Tuomela 1983, ch.4.)

According to the purposive-causal theory, a human action is regarded

as a sequence of events involving as its conceptually necessary components: (i) an event realizing a motivationally active propositional attitude, (ii) a bodily behaviour event, and (iii) a public result event or state. In the case of intentional action, the propositional attitude is the agent's intending. The inner mental event instantiating the intending is a willing in the above sense. An agent's action of opening the window is taken to consist of his willing, by his bodily behaviour, to open the window, of his bodily movements involved in the action, and of the resultant event of the window becoming open. Conceptually, a singular intended action u may be represented by the causally, but not necessarily strictly temporally, ordered sequence $<t,...,b,...,r>$, where t is willing, b is a bodily event, and r is a result.

In the purposive-causal theory the technical notion of a conduct plan is employed to represent an agent's plan for acting in a broad sense (Tuomela 1977, ch. 7). It is a technical generalization of the premises of a practical syllogism. The purposive-causal theory can be summarized in a simple schema. The general condition for a singular action $u=<t,...,b,...,r>$ of type X being intentional is as follows:

(PC) An agent performed an *intentional action* u if and only if
- (1) the agent's behaviour (b) purposively generated r;
- (2) there was a conduct plan, K, of the agent which involved an end which the agent effectively intended to realize then by his bodily behaviour (of the type believed by him b exemplified) and which he believed his behaviour will (tend to) bring about or at least be conducive to; and
- (3) this effective intending (as a willing, t) and this belief together purposively generated the behaviour b in u.

Clause (3) includes the notion of purposive generation. The contained relation of purposive generation guarantees that the purposive *direction* and *control* of action is adequately maintained in the course of the agent's acting. This notion receives different explicates in the case of different action types in Tuomela's theory. It is always at least in part a *causal* notion, even if he allows probabilistic generation in principle. It is a "purposive-preserving" relation, which holds between the act-relational willing event t and the overt behaviour (b). This feature guards against wayward causal chains.

In the purposive-causal theory, explanations of action are given by reference to the agent's operative conduct plan. This makes these explanations teleological, for a conduct plan typically mentions the agent's further goal or goals, or at least it indicates that the agent is inclined to behave in a certain direction or mentions some related broadly teleological matter. Since conduct plans also, in one way or another, involve the agent's relevant intending(s), explanations of action

may be regarded as *intentional-teleological*. (Tuomela 1983, ch. 4.)

From the purposive-causal theory of single-agent action Tuomela broadens the theoretical framework to concern the structural aspects of multi-agent actions. Since his view is that in acting, agents are exercising their causal powers, he calls his philosophical theory the purposive-causal theory of social action. By a social action is, broadly and roughly, meant an action performed by several agents, who suitably relate their individual actions to the others' actions in pursuing some joint goal or in following some common rules, practices, or the like. Examples of such actions are two or more agents carrying a heavy table together, riding a tandem-bicycle, playing tennis, getting married, greeting, asking questions and answering, etc. (Tuomela 1983, ch. 5).

Such social actions are multi-agent actions suitably put together from the actions of single agents. The following characterization can be given for what it is for a social action token to be intentional:

(PCS) The agents $A_1,...,A_m$ (jointly) performed an *intentional social action* u if and only if

(1) the results r_i, $i=1,...,m$, of the agents' component action tokens u_i together purposively generated r;

(2) there were conduct plans, say $K_1,...,K_m$, of $A_1,...,A_m$, respectively, which involved an end action the agents effectively we-intended to realize then by their bodily behaviours (of the types they took the b_i's to exemplify) such that they believed their respective behaviours will (tend to) bring it about or at least be conducive to it;

(3) the agents' effective we-intendings (as we-willings) and the beliefs referred to in clause (2) together purposively generated their behaviours in the u_i's and, intermediately, the results r_i; and

(4) each agent A_i performed his subaction u_i intentionally. (Tuomela 1983, ch. 4.)

The above characterization would lend itself to a lot of commentary, but since our primary interest is to discuss teaching as a social concept, we shall have to omit such considerations. Instead, we shall focus on a detail of the definition. In clause (2), the concept of we-intending is introduced. In effect, the whole theory of social action relies heavily on causally active we-attitudes, of which we-intentions and mutual beliefs stand out. Since we-intending is vital to analyzing social actions, we shall next consider that concept in order to understand an analysis of teaching as a social action.

4. We-intentions

In his development of a theory of multi-agent action, Tuomela attempts to create a system of social action concepts, out of which all social concepts, e.g. of groups, institution, and organization, can in a sense be built. His programme is basically functionalistic, that is, concepts are to be characterized in terms of their functions or roles in the theories where they are introduced and employed. His view is individualistic in the sense that he accepts a principle of conceptual individualism which entails a partial reduction of holistic social concepts into individualistic ones. However, conceptual individualism should not be seen so much as a principle underlying the meaning analysis of social concepts in our ordinary parlance but as a principle for construing social concepts. (Tuomela 1983, ch. 2.) I do not think Tuomela's interpretation of conceptual individualism is in sharp contrast with methodological individualism that Lukes (1968) argues against. This is particularly so when Tuomela makes it analogous with conceptual functionalism. The problem cannot be discussed here in more detail.

Many social concepts presuppose the concept of a norm. In particular, holistic social concepts are claimed to be normative or prescriptive in the sense that they are concerned with ought- and may-rules. For example, the concept of role is definable in terms of norms, i.e., in terms of what the role bearer ought to do or may do in various circumstances. Although the social realm is normative, a conceptual analysis of the structures of its norms does not presuppose normative discourse but only descriptive use of it is needed for that.

Sellars, for example, has argued that the concept of a norm cannot be expressed in the individualistic language even if the logic of this language is allowed to contain normative operators, such as 'Ought' and 'Shall'. Why this is so can be explained by the fact that many norms, e.g. all moral ones, are intersubjective and that these features cannot be accounted for in individualistic terms. Tuomela opposes this conclusion of Sellars' and argues for a partial reducibility of we-intention into individualistic terms by means of I-intentions. His point is to see how rich a framework is required for an irreducible ought-description.

Sellars (1963 and 1968) has attempted to give a fairly naturalistic analysis of norms in terms of intentions and practical thinking. An acknowledged feature of moral norms is that they are intersubjective, which means that the same norm should in principle be applicable to different agents. Practical reasoning can be connected with norms because it entails conclusions as to what one shall do, and thus these conclusions are expressions of intentions to do something. If this, excluding non-normative uses of 'shall', is taken to be what connects

practical reasoning with norms, then the problem of intersubjectivity arises. For example, a person *A* can intend to bring about that *B* do *X* and a person *C* can intend that *B* not do *X*. The intentions are not actually contradictory because they are egocentric. In terms of expressions of intention we have '*Shall*$_A$ (*B* will do *X*)' and '*Shall*$_C$ (*B* will not do *X*)' where '*Shall*$_i$ (*p*)' expresses agent *i*'s intending that *p*. The problem is to make these expressions formally contradictory. Here Sellars (1963, 196-205) introduces the concept of we-intention to handle it. Both *A* and *B* can be taken to intend in the we-mode (in Sellars' analysis by locutions of the form 'We shall do *X*') rather than in a personal mode. Then a real comparison between we-intentions can be made in the sense required by intersubjectivity.

Another argument for the need of we-intentions is that we-intending involves a special form of consciousness which is the internalization of the concept of group. A third argument reconstructed by Tuomela from Sellars' (1974, 41-42) is for the notion of akrasia. When one fails to act on the welfare of one's community as opposed to one's personal happiness, there is a conflict involved between we-intention and one's personal I-intention. This requires a concept of we-intention which is irreducible to I-intentions.

A fourth argument by Sellars (1963, 205) is that having the notion of we-intention amounts to having moral discourse and hence, more broadly normative discourse, because the 'we' in it refers to the class of rational human beings. A few distinctions made by Sellars are needed here. There are we-intentions expressed in the mode 'We shall do —' ('*Shall*$_w$ —'). Then there are shared intentions in a group. Thirdly, we have the presence of moral discourse within a group. Sellars' view is that we-intentions and moral intentions go together, at least in case of the community of all rational beings. Shared intentions are not necessary for we-intentions or moral discourse. It is not an antecedent condition of such we-intendings. Here Tuomela's view differs because he assumes that all the relevant we-intendings are present when speaking of actually occurring social actions.

Sellars' account and a proper understanding of 'we' as the class of rational human beings lead to the view that what one ought to do, pragmatically conceived, amounts to what we will insist upon and what one may do amounts to what we will allow. In Sellars' technical system we-intentions come necessarily to covary with oughts:

> (a) It shall$_w$ be the case that each of us does A_i in C_i;
> (b) If any of us is in C_i he ought to do A_i (Sellars 1968, 219).

Of these (a) is an expression of a we-intention and (b) states a norm. Connecting we-intentions with moral discourse in this strict Sellarsian

sense makes, as Tuomela (1983, ch. 2) points out, we-intentions impartial or generalizable in something like the Kantian sense. However, there is a conceptual weakness in Sellars' system. He seems to move in a circle because he characterizes we-intendings in terms of moral discourse and moral discourse in terms of we-intendings. Tuomela cannot, however, see a good philosophical solution to the problem.

A fifth argument for the need of we-intentions can be presented when we consider the notion of a rational agent acting for given reasons. A notion of a non-vacuous 'I' is required to contrast with, but not characterizable without, the concept of we-ness (Tuomela 1983, ch. 2, Sellars 1968, 223-226). Tuomela clarifies this need by referring to the plausibility of certain types of practical inference. If we jointly do something and I perform my part of the joint action, the concept pair I-we can be made to satisfy the following idealized schema which is supposed to represent my practical reasoning:

(W1) (i) We will do *X*.
(ii) I am one of us.
(iii) I will do *X*.

Here (i) is meant to be my expression of a we-intention and (ii) to be an expression of a belief of mine. A more generally applicable conclusion may also be used: (iii') I will do whatever I regard as necessary for me to do for our doing *X*. Given (W1), I do what I do at least in part, because we do *X* and I am one of us.

A more complex pattern of my reasoning can be expressed by the following practical inference schema. Here my being one of us serves as a partial, other-regarding reason for my doing one or more other actions, such as *Y* below, less directly connected to our jointly doing *X*:

(W2) (i) We will do *X*.
(ii) *A* is one of us.
(iii) I intend (to bring about) that *A* will do whatever I regard as necessary for him to do in order for us to do *X*.
(iv) I will do whatever I regard as necessary to bring it about that *A* does whatever I regard as necessary for him to do in order for us to do *X*.
(v) My doing *Y* (e.g., teaching *A* to do something) is such a thing.
(vi) I will do *Y*. (Tuomela 1983, ch. 2.)

The role of the schemas is here to indicate that one may regard the concept of we-intention as a functionally introduced notion, which inference schemas such as (W1) and (W2) partially characterize.

The above discussion will be enough to show the need for the concept

of we-intention. The possibilities that we have for an exact characterization of the concept can be considered by comparing Tuomela's and Sellars' views, because Tuomela's development of the concept of we-intention is based on Sellars' work. The following discussion is presented by Tuomela (1983, ch. 2).

The first alternative is to accept Sellars' view of the concept of we-intention as an individualistically irreducible primitive concept, which then gives us normative discourse. It does not, however, create a sufficient descriptive or factual basis for social science. The second alternative is to accept the concept of we-intention as a primitive concept and accept a Sellarsian analysis in terms of it but introduce we-intentions only functionally. In that case it may serve as a sufficient descriptive or factual basis for social science. Thirdly, Sellars' arguments against the reducibility of we-intentions may be disregarded and claim that the concept of we-intention can explicitly be defined in terms of I-intentions and I-beliefs. Tuomela chooses the last alternative and accordingly defines the we-intention connected with a social action as follows:

(WI) A member A_i of a collective G *we-intends* to do X if and only if
- (i) A_i intends to do X (or his part of X), given that (he believes that) every (full-fledged and adequately informed) member of G or at least that a sufficient number of them, as required for the performance of X, will (or at least probably will) do X (or his part of X);
- (ii) A_i believes that every (full-fledged and adequately informed) member of G or at least that a sufficient number of them, as required for the performance of X will or at least probably will) do X (or his part of X);
- (iii) there is a mutual belief in G to the effect that (i) and (ii).

It is essential of (WI) that A_i's intending of clause (i) is made conditional on the other agents' actions. The weakened alternative condition in (i) and (ii) claims that it is motivationally sufficient for A_i to intend to do his part of X if he believes that sufficiently many will do (or probably will do) their parts. Another central idea in (WI) is one of intention-justification. From (i)-(iii) logically follows that A_i intends to do (his part of) X unconditionally and (in part) *because* he believes that everyone in G, i.e., each of us or at least a sufficient number of us, will (or probably will) do (his part of) X. Clause (iii) serves to make we-intentions intersubjective in a strong sense going much beyond (ii).

(WI) is assumed to concern a we-intention to perform a social action X. A social action type X can, relative to the context, technically be analyzed as a conjunction $X\&...\&X$, where X represents agent A_i's part of the social action X. The definiens of (WI) entails that each member of G

intends to do either X or his part of X. It is not, however, required that A_i know a more specific description of his part of X, although he must have a correct belief concerning what that part is.

Given (WI), other requirements on we-intentions may possibly be imposed. Tuomela normally takes inferences such as those elucidated by the schema (W2) to be satisfied by any we-intention. However, the definiens of (WI) may occasionally be regarded as satisfied even if (W2) is not.

Why should we accept a reductionistic analysis? Tuomela finds justifications by reconsidering Sellars' arguments for the introduction of we-intentions. No logical problem of intersubjectivity arises since we-intentions may technically be used even if we might be able to define them explicitly. There will be no philosophical problem of intersubjectivity, either, because the notion of mutual belief in the definiens accounts for the internalization of the concept of group.

As for akrasia, Tuomela handles it by referring to the two modes of intending applicable to an individual: (i) self-regarding intending which is not required to satisfy schema (W2), and (ii) other-regarding intending which satisfies (W2). The distinction accounts for the akrasia because suitable other-regarding intentions can be employed independently of whether an individualistic definition of them can be given. This answer also covers the fifth argument about the need for a concept of a "non-vacuous" I.

In Sellars' fourth argument we-intentions are connected with moral discourse. Tuomela does not consider it crucially matters whether we use an irreducible we-intention concept or a concept defined individualistically in terms of I-intendings and mutual belief. However, a contradiction may be seen between Sellars' view that we-intentions do not presuppose shared intentions and Tuomela's reductionistic analyses. According to Tuomela, what Sellars opposes is that a group's we-intending to do X entails that its every member we-intends to do X. Tuomela basically accepts this view because his reductionistic analysis does not entail shared intentions. Tuomela's analysis only entails that if a person M in G we-intends to do X, then he also I-intends to do X (or his part of X). It is worth noting that M's we-intending does not entail that any other member of G I-intends, for the mutual belief in the definiens need not be true. Secondly, Tuomela's analysis does not claim that a group's we-intending to do X entails that its every member we-intends to do X. Tuomela does not, however, assume that normative discourse has to be made in the Sellarsian way, and wants to keep his notion of we-intending neutral with respect to any specific ethical position.

5. Teaching and learning

5.1. Analyses of teaching and learning in the educational literature

The preceding discussion has described intentional actions performed by single agents within philosophical action theories, and multi-agent actions within the purposive-causal theory of social action. Since I have adopted Tuomela's theory, I shall only discuss teaching within the purposive-causal theory. But before that can be done, we shall have to look at how teaching generally is analyzed in the educational literature.

A central problem for those who have been preoccupied with the nature of teaching has been the connection between teaching and learning. This has generated discussion about the questions of whether teaching is an activity, whether there are different senses of the verb 'to teach', and what is the nature of learning. An activity is often used to refer to an action, although it is not always clear whether there is a difference of meaning between 'activity' and 'action'. In this study the term 'action' is used when a specific reference is made to an action description. Otherwise, no particular distinction is meant between 'activity' and 'action'. The varied use of the terms is mainly due to the different sources employed.

It is widely agreed that an activity requires a relevant intention, which, in the case of teaching, is to bring about learning. There is also substantial support for the view that this intention is not sufficient for teaching, but learning as an outcome of teaching is also required. Kleinig (1982, 25) argues that as soon as our attention is turned away from the conventional, institutionalized occasions and techniques of teaching, it becomes clear that we teach others without intending to do so. "Think of how much we can be taught by someone's example — in cases where if teaching was intended it might not have been the example it was: a kindness done in response to someone's need, and without a thought for what it might teach; hypocritical acts, which speak louder than the words that were intended to teach; and so on." (Kleinig 1982, 25.)

I think Kleinig's observation is correct, but his argument against the need of the relevant intention for teaching is mistaken. In the first place, the linguistic term 'teaching' is here used metaphorically. The whole scene is described from the standpoint of one who perceives and observes a person or an event. If such observations leave a more permanent trace upon his mind, we may refer to the event as an instance of learning, not one of teaching. Secondly, it is to be taken for granted that under normal circumstances, teaching must be attributed to an agent in a way that the agent himself has some sort of conscious purpose or intention to teach. Thirdly, too lax an extension of the meaning area of the concept leads to

a conflated scientific concept, because learning cannot be separated from the intentional teaching. The environment as such is there to be experienced and thus to be learned. It is not very illuminating to describe an environment as a "teacher", even though it consists of agents that may give stimulus to learning.

Of course, there exists much learning that is not actually related to teaching, and learning as such covers a much larger range of instances than learning in the context of teaching. If the intention to bring about learning is not required, teaching will be reduced to learning, in a sense. In other words, what there is to be learned is left to the responsibility of the learner, and teaching as a distinctive concept will lose its essential sense. Such a lax use of the concept of teaching is hardly desirable.

It seems to be generally acknowledged that teaching as a concept is used in different senses, and a lot of thought has been devoted to various ways of analyzing the concept. Several attempts have been made to analyze teaching by including the learning outcome in the definition. Scheffler (1960), for example, distinguishes "success" from "intentional" uses of the notion 'teaching'. The difference is based on the distinction made by Ryle (1949) in treating achievement words and tasks words. On that basis, Scheffler (1960, 42) shows that the statement "There can be no teaching without learning", so plausible as it sounds as a literal doctrine, is in fact false. In some uses of the verb 'to teach', it does not imply success, in others it does. There is a difference, for example, between the questions "What have you been teaching him?" (What have you been trying to get him to learn?) and "What have you taught him?" (What have you been successful in teaching him?) The first question contains an intentional use of the verb, while the second question contains a success use. If the pupil I have been teaching has in fact not learnt anything, I may reply "Nothing" to the second question.

I do not think this analysis uses the concepts of intentional and successful quite conclusively. Neither do I think it has much relevance to the concept of teaching because the distinction relies too heavily on the semantic meaning of teaching and on its use in various contexts. Therefore, the inferences are not necessarily important in terms of factual actions. It is mainly the use of the English language that is made explicit by this analysis. What seems basically wrong to me is that the activity of teaching, in a sense, becomes factually underestimated and distorted, and is not conceptually logical, when a learning outcome is involved in the concept of teaching.

Green (1971, 2) considers teaching a practical activity. By observing what teachers do, he thinks we might find out what teaching is. It may be possible to get a general picture of activities connected with teaching in that way. But I do not believe we can grasp the core of the concept of teaching by this method. It is because, then, an attempt is made to

generalize from the empirical phenomena something that conceptually might be defined as teaching. It is possible to discover what teaching activities occur in reality, but to know what teaching is, is a conceptual matter and must be characterized as a concept of teaching, and not as an empirical generalization from teaching phenomena. The question is about what one is entitled to think in connection with teaching. For such a characterization, we need to analyze the logical elements of the concept, rather than empirical phenomena. Nevertheless, Green's classification helps us to make some useful distinctions.

Green gives a list of the teacher's activities grouped under three general headings: the logical acts, the strategic acts, and the institutional acts of teaching. The first heading refers to those activities relating primarily to the element of thinking or reasoning in the conduct of teaching. The second heading covers a list of those items that have to do primarily with the teacher's plan or strategy in teaching, the way material is organized or students are directed in the course of teaching. The third heading includes those activities that arise primarily because of the way the teacher's work is organized by the institution of the school.

The logical acts	**The strategic acts**	**The institutional acts**
1. Explaining	1. Motivating	1. Collecting money
2. Concluding	2. Counseling	2. Chaperoning
3. Inferring	3. Evaluating	3. Patrolling the hall
4. Giving reasons	4. Planning	4. Attending meetings
5. Amassing evidence	5. Encouraging	5. Taking attendance
6. Demonstrating	6. Disciplining	6. Consulting parents
7. Defining	7. Questioning	7. Keeping reports

(Green 1971, 4)

The standpoint of the characterization is the teacher's profession, so that teaching is derived from what the teacher does in his role as teacher. The division will serve as an aid to understand what the activity of teaching is. Therefore, it is important to discriminate between the activity of teaching on the one hand, and the office of the teacher, on the other. The so-called institutional acts of teaching are not necessary for the activity of teaching. There is actually no inconsistency in the idea that teaching may go on even when the institutional acts of teaching are not. (Green 1971, 5.)

Green claims that teaching cannot occur independently of logical and strategic acts. I do not think there is any disagreement about the necessity of the logical acts of teaching. But it is hardly self-evident that the strategic acts are also necessary for the concept of teaching. The teacher's strategic reasons will more often be related to the nature of the students to be taught; in other words, the teacher ponders how well they

understood what was done before, whether they are tired, anxious, motivated, prepared to advance, and so forth (Green 1971, 8-9). Of course, such reasons are important for the practical activity, but I do not see their relevance to the concept of teaching. In fact, it is more correct to say that the performance of the logical and strategic acts of teaching is an important factor for the conduct of teaching, i.e., for the practical activity, but not undeniably for the concept of teaching.

An important distinction is drawn between the logical and strategic acts of teaching: the latter will be evaluated chiefly by their consequences, but the former independently of their consequences (Green 1971, 7). By consequences, Green means learning outcomes. A logical act, such as an explanation, is good or adequate if it accounts for what is to be explained. If it is well constructed and without logical fault, then it is a good explanation, without any reference to anyone understanding it except its author. The teacher's reasons related to the logical acts of teaching will have more to do with the subject to be taught and the ways of knowing within that field.

Green is naturally right in his conclusion that teaching as logical acts can be appraised on logical grounds even though nobody learns from it. Since Green is concerned that the logical acts are also good in a heuristic sense, success in getting someone to learn is a criterion of what is heuristically good. Thus, performances of the strategic acts of teaching are appraised by their consequences for learning. (p. 8.) Green believes that the logical and strategic acts of teaching "involve different kinds of skills and different kinds of knowledge, the one requiring a knowledge of the methods of knowing, and the other considerable knowledge of human behaviour and motivation. The one requires a knowledge of the laws of thought, the other an acquaintance with the laws of learning and human growth." (Green 1971, 8.)

Green (1971, 6) considers the performance of the logical and strategic acts of teaching to be a necessary condition for the conduct of teaching. If we assume that the strategic acts are also necessary for the concept of teaching, we are forced to accept empirical learning outcomes of teaching as part of the concept. This must be a mistake. We can predict with a certain probability such outcomes on the basis of strategic acts, but those results are not logically tied to the concept of teaching. Therefore, I am inclined to accept only the logical acts as belonging to the analysis of the concept of teaching.

The distinction between succcessful and intentional teaching is actually based on the distinction drawn between the product and process of teaching. Learning outcomes are talked of as products of teaching whereas teaching activities are seen as processes and are referred to as the intentional use of 'teaching'. These two categories are often mixed, and when that is done, a mistake is made. Just as Green (1971, 36) points out,

it is fallacious to reason from what is true about teaching in the process sense to what is true about teaching in the product sense.

Since the concept of teaching cannot be relevantly analyzed in terms of the product and process dimension, we must find other ways. If we do not accept learning outcomes as logical products of teaching, we can nonetheless stick to describing teaching as a process. If such a process is interpreted as an action, intentionality may be required for the description of such actions. We can make useful distinctions among teaching actions on the basis of what is to be taught.

For example, one major difference of emphasis in teaching is made by the linguistic contrast between "teaching someone to do so-and-so" and "teaching someone that so-and-so is the case". The former focusses on the formation of behaviour and the second on the transmission of knowledge. This distinction may lead to wholly different philosophical views of education, depending on which of the two emphases is regarded as the more basic. As Green (1971, 23) points out, "implicit in this contrast between "teaching that" and "teaching to" is the difficult problem of the relation between thinking and knowing, on the one hand, and doing or acting on the other". My aim is not to consider the problem in terms of different educational philosophies, but I find the distinction important for the analysis of teaching in the action language, because different conditions obviously prevail in the two emphases in teaching.

There are also other writers who complain of conflating the teacher's and pupils' face-to-face behaviour with the concept of teaching. Jackson (1962), for example, is one of them. He wishes to distinguish the so-called preactive teaching from the interactive teaching. The former refers to the teacher's preparing the lesson plans, studying test papers, arranging furniture and equipment within the room, etc. All this planning is more or less deliberative and meant to help the interactive phase succeed. There is no denying that the preactive phase is important for factual teaching, but like strategic acts, it is not conceptually necessary for teaching. If teaching is viewed only as the teacher's performance, we can find arguments for Jackson's distinction. But since our standpoint is that teaching must be seen as a social concept, we cannot accept the view that the preactive teaching is vital to the concept of teaching. On the other hand, it is possible to argue for Jackson's view after we have built the social concept of teaching out of the social action of teaching, and not the other way round.

Although there are different conceptions of teaching, a fairly vast agreement prevails about employing teaching in the intentional sense. However, writers may disagree about the scope of the concept. One significant thing about the views of Smith (1960) and Scheffler (1967), for example, is that neither of them includes the subject to be taught in their

definitions. Hyman (1967), in particular, emphasizes a triadic relationship between the teacher, the pupil, and subject matter which constitute the three elements involved in the teaching action. The nature of the teaching triad is such that it is impossible to have a teacher and pupil without subject matter connecting them. The dynamic conception of teaching also means that changes in a body of knowledge will influence the activities teachers perform. (Hyman 1967.)

I think Hyman's view is quite correct because the subject matter is also vital to different changes in the teaching activities. The importance of the subject matter is also involved in the major distinction made above between 'teaching to' and 'teaching that' because the distinction is related to what is taught and how it is done. The difference does not, however, imply that the distinction follows the borderlines of different school subjects. It is obvious that teaching any subject embraces elements from both categories and thus calls for various modes and methods to cover the subject matter.

The inclusion of the subject matter in the concept of teaching makes it possible conceptually to divide pedagogy into different, more or less independent, fields of educational research along the dimension of the subject matter. Such research fields are concerned with the teaching of different subjects: foreign language pedagogy, mother-tongue pedagogy, the pedagogy of mathematical subjects, etc. I hope the necessity of the subject matter for the concept of teaching will become adequately clear when the different modes of teaching are dealt with further on.

5.2. Teaching as a single-agent intentional action

The preceding discussion showed that teaching can be viewed from a fairly broad perspective so that many different activities may be regarded as teaching. It is however important to find some element that essentially characterizes teaching. Such an element is bringing about learning. When we speak of teaching, we usually think of the teacher's actions as bringing about learning. According to a single-agent theory, it is then possible to analyze the structure of the teacher's action. The agency and hermeneutic theories have above been considered to be limited to the degree that they leave the behaviour of an intentional action unanalyzed and focus more on the conceptual side of the action description. The purposive-causal theory is considered a more detailed instrument, and therefore, it has been accepted to serve as a means of analysis for teaching.

The causal order of the event sequence in a singular action u can be described as $u=\langle t,...,b,...,r\rangle$. A general condition for a singular action u of teaching being intentional is as follows:

(PC) A teacher performed an intentional action *u* (e.g. explained the future tense of English) if and only if

(1) the teacher's behaviour (*b*) (he explained the facts on the future tense of English by using the blackboard relevantly, for example) purposively generated *r* (=the accomplishment of the explaining task);

(2) there was a conduct plan, *K*, of the teacher which involved an end (=to bring about learning) which the teacher then effectively intended to realize by his bodily behaviour (*b*) and which he believed his behaviour will bring about or at least be conducive to, and

(3) this effective intending (as a willing, *t*) and this belief together purposively generated the behaviour *b* in *u*.

The semantic interpretations of symbols in case of teaching need not be taken too strictly and literally, because a lot of specific situational conditions can be specified which may affect the character of the teaching action. The purpose is only to clarify a typical action in terms of teaching.

The purposive causality holds between the act-relational willing event *t* and the overt behaviour (*b*). Thus the intrinsic aim is involved in the causal willing to perform the explaining event which the teacher in this case believes to satisfy the extrinsic aim, i.e., to bring about learning. The extrinsic aim is included in the conduct plan. The teacher's belief in effectively bringing about learning is involved to generate the intentional action of explaining facts about the future tense of English. The causal result of the intrinsic aim is the accomplished task (the explaining event) but not the fact that he did bring about learning in the pupil, which is the extrinsic aim of the action. If he did bring about that learning in the pupil, it was a factual consequence but not a causal result from the teacher's action. The purposive-causality prevails between the intentional aim and the result of the action logically but not factually. This analysis makes it clear that the learning outcomes cannot be regarded as the causal products of the teacher's action. They may be factual consequences, but not conceptually necessary consequences. This state of affairs can also be deployed as a good argument against the common view that the quality of teaching is only to be assessed on the basis of successful learning outcomes.

When we ask how teaching can be distinguished from other actions, the answer may be given by means of referring to the extrinsic aim of the action. The agent is aware of it because it must be included in his conduct plan. An observer does not know for sure what the extrinsic aim in every action is because he can only rely on what he perceives. In reality, observers can make inferences about the extrinsic aim by former

knowledge, experience and social practice. The teacher's extrinsic aim of bringing about learning must also be known to the pupil if he is to participate in the teaching. This problem area will be dealt with later.

As for the teacher as an agent, he must have a notion of what it is to teach, i.e., he must have a preknowledge of what acts and behaviour are involved in teaching. This refers to that old view of Aristotle's that an artisan must have a knowledge of the goal and how to achieve it. Miss Anscombe also makes a corresponding remark: observers of teaching must also have a similar preknowledge of what it is to teach in order to recognize the action.

In the purposive-causal framework it is possible to connect the conceptual and factual in a nomic way, which enables us to make it explicit that the learning outcome as a factual phenomenon is not to be included in the concept of teaching. This is not to suggest that the concept of learning should not be needed for analysis of teaching. What is only denied is the demand that a factual learning outcome is a necessary condition for the definition of teaching, as Hirst (1971), for example, suggests, and that it must be causally related to the concept of teaching.

Only intrinsic aims can be necessary results of actions. Extrinsic aims are conceptually related to actions in terms of teleology, but their factual occurrences are not causally brought about, neither in the purposive-causal sense of semantic discourse nor in the factual effect sense of cause and effect between phenomena. If we think of an analogic example of my wanting to get fresh air (an extrinsic aim), I form an intention to open the window. The result of my action is the window becoming open, but my action does not guarantee that I do get in fresh air and not polluted air, for example. In the same sense, the extrinsic aim of bringing about learning is purposive-causally linked to the result of the action, but is not a sufficient condition for a consequence of the action, which a learning outcome is an example of.

5.3. Learning in the educational literature

Learning as well as teaching is a polymorphous concept. As a consequence, a lot of misconceptions may occur if it is not somehow defined for its meaning. A number of questions can be asked about the ontology and the epistemological nature of learning. We may ask, for example, how and what makes it possible that an individual born into the world, with his individual potentialities and capacities, can develop an understanding and knowledge which is both objective and shared with others. We may ask how experience and understanding make learning and the growth of understanding possible. Even though we in

practice are curious about the course of this development, a philosopher cannot answer that, because there are no rules that can be established *a priori* about learning beyond its very possibility (Hamlyn 1978, 129).

The factual learning outcomes are not to be predicted on the basis of a philosophical analysis. Therefore it is out of place to confuse them in a conceptual discussion. A similar line of thought can be found in Kleinig (1982, 37) where it is stated that "(t)he behavioural changes (if they occur) do not constitute but rather express or exhibit what is learned. The learning is characterized by understanding, and for this there may be no behavioural equivalents, except, perhaps, in the most attenuated sense (e.g. 'corresponding' neural processes)."

In the educational literature, learning is usually associated with teaching, and then we may ask in what sense learning is then employed. It is most frequently left undefined, but its meaning can often be inferred from the way it is used for the analysis of the relationship between teaching and learning. The most common interpretation sees learning as an achievement of a learning task, i.e. as an outcome. It may sometimes be viewed as an intentional activity but even then it is associated with an outcome. This confusion is reflected in the following presentation.

A rationale for Peters' (1967) notion of education as initiation is to regard processes of education as tasks relative to achievements. This accounts for the feature of education that its standards are intrinsic, not extrinsic to it. Following Aristotle, Peters (1967) makes the point that in relation to performances such as 'learning' and 'inferring', the end is built into the concepts. One does not produce something or reach an end which is extrinsic to the activity in which one is engaged. One merely succeeds in it. One achieves the standard or attains the end which is internal to the activity and which gives it point. So a man who is educated is a man who has succeeded in relation to certain tasks on which he and his teacher have been engaged in for some time. Thus 'being educated' is the achievement relative to a family of tasks which are called processes of education.

One can admit that Peters is right in his claim that the end is built into the concept of an action. But his aim refers to what we have called the extrinsic aim. That cannot, however, be the logical result of the action. Only the intrinsic aim is logically connected with the result of the action. Peters' analysis of activity seems to fall under the description of hermeneutic theory. This analysis shows that the hermeneutic theory does not provide us with a means of separating these two aims. Peters perhaps makes a category mistake when he links the state of being educated with the process of intentional action. We are not allowed to infer from the state of having achieved something to the process of trying to achieve something.

Peters speaks of education, but in this connection it may be parallelled

with teaching. Basically, the view that educational processes consist of tasks and their achievement can constitute a good basis for analysis, even though combining achievement with tasks cannot be correct for conceptual analysis. The concept of teaching is analyzed differently from the view adopted in this work, but I think that the framework of tasks is basically similar to the analysis of actions in the purposive-causal theory. The distinction between an intrinsic aim and an extrinsic aim is not seen as relevant, so the behavioural part of the action is not made explicit to the same extent as in the purposive-causal theory of actions. Due to this difference, the tasks are apparently given another role in the analysis.

As for the teacher's success, Peters (1967) claims that it can only be defined in terms of that of the learner. Peters presumes this to be the logical truth dormant in the saying that all education is self-education. I do not want to refuse the teacher the joy of his pupil's success in learning, but what I want to deny is that the preceding teaching is a sufficient condition for the success, i.e., no factual causality prevails between teaching and learning. However, teaching may be considered a necessary condition for the learning that is linked with teaching, even though learning as such does not presuppose teaching.

As an example of the models of learning being confused with those of teaching, I shall cite Scheffler. In a contribution to the concept of teaching, Scheffler (1967) characterizes three philosophical models of teaching: the impression model, the insight model, and the rule model. The impression model pictures the mind as sifting and storing the external impressions to which it is receptive. The end result of teaching is seen as an accumulation in the learner of basic elements fed in from without, organized and processed in standard ways, but not generated by the learner himself. To treat the matter briefly, we may state that the most fundamental criticism is that knowledge is not achieved through such a standard set of operations. We cannot feed into the learner's mind all that we hope he will have as the end result of our teaching.

The insight model denies the possibility of conveying ideas or bits of knowledge into the student's mind in the way the impression model supposes. The insight model insists that knowledge is a matter of vision, which cannot be dissected into elemetary sensory or verbal units to be conveyed from one person to another. The most the teacher can do is to stimulate vision, which organizes various experiences. The insight model provides no role for the concepts of principles and reasons. This is a serious shortcoming, for the concept of principles and the concept of reasons together underlie the notions of rational deliberations and critical judgment. (Scheffler 1967.)

The third model called the rule model is associated with Kant, because Kant emphasizes reason, which always embraces general rules or principles. Since the concepts of principles, reasons, and consistency go

together and apply both to the cognitive judgment of beliefs and the moral assessment of conduct, they can be considered to define a general concept of rationality. The rule model emphasizes that the growth of knowledge is not to be construed as personal interaction between the teacher and student, but rather as being mediated by general principles of rationality. (Scheffler 1967.)

Although Scheffler sees that there is something too formal and abstract in the rule model, he considers it the best of the models. From the point of view of teaching, the rule model denies the behaviourist view that teaching is a matter of the teacher's shaping the student's behaviour or of controlling his mind. It is, Scheffler claims, a matter of passing on the traditions of principled thought and action which define the rational life for teacher as well as student.

Scheffler regards his models as models of teaching, but criticism may be directed against this view. He forms the models from the standpoint of the pupil, and consequently draws distinctions between the different ways of learning, i.e. on the basis of potential learning outcomes. In other words, he builds the teaching models out of learning, and evidently sees teaching subjected to learning. Does this make a difference in regard to the view which describes teaching as an action? For the concept of action, it is obviously not important from which sources it draws its contents as long as teaching is considered an action. It is quite possible to describe teaching in the action language even though the teacher's intentions are formed on the basis of potential learning outcomes. But a category mistake is made when intentions to perform teaching actions are thought to result in factual learning outcomes.

The reason why I actually wanted to quote Scheffler's models was not for the sake of teaching, but for the sake of learning. Scheffler's analysis leads us to think that we may examine learning as an action that the pupil engages in when he acts according to the insight or the rule model. This thought comes easily to mind if the teacher's efforts do not directly lead to learning. When Scheffler emphasizes the rational role of the pupil, it is not a long step to think of learning as an intentional action. The action language then enables us to describe learning as a process, and to make the necessary distinctions so that learning outcomes are not conceptually confused with intentions to learn. This last point cannot actually be read off from Scheffler's analysis because learning is there viewed in relation to teaching. Nevertheless, it is a significant point that is made explicit later.

As a matter of fact, Scheffler's arguments provide a direct link with the analysis of teaching as action within the purposive-causal theory, for the conduct plan in the schema of an intentional action is based on the agent's practical reasoning. Further, his point enables the pupil to engage in rational judgment and deliberation, which emphasizes the

pupil's role as a rational agent and as a subject, and not as an object of the teacher's direct manipulation. Of course this is not what Scheffler meant by his analysis, but it is my interpretation of his arguments that may be adduced to support the standpoint that learning must also be viewed as an intentional action.

Some indirect support for the non-causal relation between teaching and learning is also gained from Ryle's (1967) analysis. He clarifies teaching by claiming that *teaching oneself* goes hand in hand with the notion of *thinking for oneself*. In his view, teaching fails, i.e. either the teacher or the pupil is a failure, if the pupil does not become able to arrive at his own solutions to problems. How can the teacher logically dragoon his pupil into thinking for himself, enforce originality upon him, etc.? In other words, how, logically, anyone can be taught to do untaught things? Ryle answers that it cannot be done. The reason why we think that the teacher must do so is that we are "unwittingly enslaved by the crude, semi-hydraulic idea that in essence to teach is to pump propositions, like 'Waterloo, 1815' into the pupils' ears, until they regurgitate them automatically" (Ryle 1967).

The seeming paradox may be made to disappear when the notion of 'teaching to' or teaching how to' is deployed instead of the notion of 'hydraulic injection'. The teacher can introduce the pupil to a way or the way of doing something, but the actual essays in the exercise of this craft or competence are the pupil's, not the teacher's. The teacher does not literally make him do them, he gives him the *modus operandi*, which enables the pupil to operate according to it. The practising by which the pupil masters the method is his exertion, not the teacher's. That the pupil tries is not something that the teacher can coerce.

Ryle's analysis focusses on one aspect of learning and is thus limited in scope. In the psychological literature the phenomenon may be referred to as the problem of 'transfer'. However, Ryle's analysis clearly shows the implausibility of the teacher's causal influence on learning. The pupil actively has to do the learning part of the things taught. Ryle's analysis seems to suggest that the things taught are not strictly speaking the things learnt. The input is obviously somehow modified, in a way that is characteristic of the individual learner. Interesting as this point is both philosophically and empirically, it cannot be discussed in more detail, because it is not of immediate relevance to the development of this study.

A similar standpoint of emphasizing the pupil's role is seen in Oakeshott's definition: "By learning I mean an activity possible only to an intelligence capable of choice and self-direction in relation to his own impulses and to the world around him. ... He is a creature of wants rather than of needs, of recorrection as well as memory; he wants to know what to think and what to believe and not merely what to do. Learning concerns conduct, not behaviour." (Oakeshott 1967.)

All this is to entail a pupil as an acting subject who is responsible for his own actions in a teaching situation. Even though learning is described as an activity, I doubt that 'activity' is here given quite the sense of action. The pupil's participation is related to the knowledge imparted by the teacher rather than to the social action in the teaching situation. What is usually emphasized in those views is the pupil's being active and paying attention to what is being transmitted. Also, the same aspect of the pupil's own input is reflected in the counterposition of instruction versus discovery learning. Despite the interpretations that the pupil is active in receiving what is taught to him, these approaches to analyzing teaching seem to view the teaching event in a one-way direction. Focus is drawn on the teacher's action. All that may be expected of the pupil is attention. This claim particularly applies to instruction. The pupil is given a passive role in the action though his readiness to receive is commonly presupposed.

In connection with learning, conditioning is sometimes related to it. Vesey (1967) has interestingly analyzed whether conditioning is learning or not. He claims that "whatever one does, in learning to do something, must itself really be something one *does*, something in which one is actively engaged. It cannot be simply something which happens to one. But 'being conditioned' is precisely not something one does. It is something which is done to one — either by oneself or, as is usually the case, by someone else." This clearly shows that the process of being conditioned is not itself an instance of someone learning something. So classical conditioning cannot be considered learning. This is fairly widely agreed on.

All in all, we can discover different types of learning. As we noted in connection with teaching, the major distinction was found between 'teaching that' and 'teaching to'. The distinction is based on what is to be taught. Similarly, in learning we may draw distinctions on the basis of what is to be learnt. Hamlyn has analyzed this and summarizes it as follows. "In all learning, however, there is a kind of interplay between experience and understanding,... In skills there must be some understanding of what one is engaged in, and the acquisition of the skill depends upon an interplay between that understanding and the experience that is presupposed in action at least in the form of a kind of feed-back from the action. Similar things can be said of the acquisition of new ways of experiencing things, since the new experiences could not be constructed out of the old ones without some understanding of what the experiences are of. Thus there is in a sense a growth of understanding in all learning, whether we put the emphasis on that or on the new experiences or new performances." (Hamlyn 1978, 128.)

Hamlyn's analysis suggests that the aspect that combines all learning is understanding and its growth. It only varies in terms of emphasis

according to what is to be learnt. Learning is here seen as outcomes, and their relationship to the activities that the learner engages in is an empirical, not a conceptual matter. As Hamlyn (1978, 128) concludes, "(i)t is difficult to think, however, that there are any rules which govern the growth of that understanding except the ones imposed by logic. ... there is no sure inference from logical relationships to order of learning. Logical relationships have no necessary implications for temporal relationships..."

When learning is viewed as understanding, we may say that understanding is a form of learning outcome. There is, however, another aspect to this. What once has been understood, must later be retrieved. In other words, the learner must be able to commit what he has learnt to memory in a way that it is stored there and can be retrieved at later use. This is evidently linked with neurological function more than with the learner's control, even though certain psychological strategies may aid the function of memory.

Since learning outcomes have been considered factual consequences of actions, they have been left out of the conceptual analysis of teaching. The same obviously applies to the concept of learning if learning is seen as an action. As has been vaguely implied, learning can be viewed as an intentional action. Then learning outcomes cannot be a logically necessary condition for the concept of learning. Neither can we take learning as a fysiological phenomenon to be a necessary element for an analysis of the concept. Instead, learning in some sense of receiving instruction, getting knowledge or skills, and participating in the teaching action is what is needed when learning is connected with teaching. In such a sense, learning, just like teaching, can be described in the action language.

5.4. Learning as a single-agent action

Teaching as action must somehow involve learning, not as a concept of learning outcome, but as a concept that represents the person who is taught, i.e. the pupil who is bound to learn in the teaching situation. Therefore, it is necessary to view him as an agent as well. This entails that he also performs actions, which may then be described within the framework of action theories. Here the reasons for the view of learning as an action are seen from the perspective of teaching. But learning as such can be an action which an agent may intentionally engage in, just as in any other intentional action. This is done when an agent reasons and plans his actions. Why should learning be different from any other activities that people may be occupied with?

If the pupil is seen as a subject, he comes to a teaching situation as a human being who has a will, wants, intentions, desires, etc. This speaks

for the view that the pupil must be regarded as an agent who actively and consciously chooses to participate in the teaching event. His activities for learning are intentional and can be described in the action language. Although the argument here is for a need of the concept of intentional learning, it is not implied that the use of the concept should be limited to the teaching connection. Learning is naturally performed as an intentional action in numerous other conditions as well.

Even in analyses that pay attention to the pupil, the role of the pupil as an agent somehow appears to be undermined and subjected to the intentionality of the teacher. The incentive of the learner to engage in the teaching-learning process is not analyzed as an intentional action with equal seriousness, because the pupil's role is described as constituting only the learning part and not the participation in the behavioural activities of the teaching-learning event. For example, if the aim is to learn to communicate in a foreign language, participating in conversation or discussion class is a practice activity rather than learning a particular thing by being attentive to it. Acquiring a skill requires practice so that the pupil's performance improves. Even then it is the question of learning, as was pointed out above.

There are many sorts and modes of learning that must be included in the description of learning as intentional action. Whatever one attempts to learn can be described in terms of intentions to bring about that learning. Learning outcomes are not, however, logically connected with these intentions. The pupil's aim to learn can be paraphased as his aim to bring about learning. That aim is extrinsic, just like in the context of teaching the teacher has a similar extrinsic aim. Likewise, the result from the action is not a factual learning outcome. An intrinsic aim which is formulated as an intention to perform the action is part of the description of action generation. The description of the conclusion is also included as the built-in result in the structure of the action.

In a preceding chapter, formulations of different action theories were given in a schematic form. Since we have adopted the purposive-causal theory, we shall formulate an example in that schema. In the purposive-causal theory a singular action is symbolized $u = \langle t,...,b,...,r \rangle$ of type X. Here type X must refer to learning, i.e. in the sense of bringing about learning. Thus,

(PC) A pupil performed an *intentional action u* (i.e. reading a passage) if and only if
  (1) the pupil's behaviour (b) (=the viewing and reading the text) purposively generated r (=the accomplishment of reading),
  (2) there was a conduct plan, K, of the agent which involved an end (=to learn the passage) which the pupil effectively intended to realize then by his bodily behaviour (=by viewing

and reading the text) and which he believed his behaviour will bring about or at least be conducive to; and

(3) this effective intending (as a willing, *t*) and this belief together purposively generated the behaviour *b* in *u*.

The semantic interpretations of the symbols in the example need not be taken too literally, because a lot of specific situational conditions can be given which may affect the character of the teaching action. The purpose is only to clarify a typical action of learning in a teaching situation.

A purposive-preserving relation holds between the act-relational willing event (*t*) and the overt behaviour (*b*), which guards against wayward causal chains. The purposiveness is always at least in part causal even if probabilistic generation is allowed in principle. In the schema the intrinsic aim of the action belongs to the pupil's causally active willing to read the passage, which, in his opinion, satisfies the extrinsic aim of learning it. Thus, the role of the intrinsic aim is not reduced to the role of causality as in the mental cause theory.

The distinction drawn between the intrinsic and the extrinsic aim is clearly seen in this schema. The pupil may have a strong desire to learn. Some pupils learn the passage, others do not. There must be factors involved in learning that cannot even be controlled by the learner himself. The result of the action cannot be learning in the sense of a learning outcome, because it is not logically connected with the pupil's external aim, i.e. his desire to learn. This desire is not a sufficient condition for successful learning to occur. The role of learning in the action description is thus to show the extrinsic aim of the action and then a possible factual consequence, whereas the intrinsic aim serves as the result of the action. The consequence is not a logical presupposition built in the causal structure of the action description. Learning is only a possible consequence of an action. As it, however, often occurs in reality as a consequence of an intentional action, it can be predicted within certain probability limits. Conceptually, learning as an extrinsic aim must thus be distinguished from the built-in result of action.

I think learning as an intentional action can be considered a good counterexample to the mental cause theory. Its claims are too strong, because the desire to do something does not entail the action. Even though the pupil has a serious desire to learn something, there is no guarantee that he will factually achieve his goal as a learning outcome. Tuomela found and used other arguments against the mental cause theory, of which the wayward causal chains were the most fatal.

What perhaps gives more weight to the purposive-causal theory is that it is a broadly factual nomic statement about the world rather than a mere conceptual analysis. Thus the causal and teleological elements can

be distinguished in the action description, which also clarifies theory developments in factual sciences. The account that *t* purposively caused *b* is used to classify the pupil's behaviour as an intentional action. An explanation of the pupil's action can be given by reference to his operative conduct plan which includes the goal of learning, that is, bringing about learning. This explanation is thus made teleological. Since the pupil's relevant intending is also involved in the conduct plan, Tuomela calls this an intentional-teleological explanation of action.

As we have noted, there may be different modes and forms of learning. Since our aim is to analyze the concept of teaching, the different modes of learning that are related to teaching will be dealt with in connection with teaching as a joint action.

6. Teaching as a multi-agent action

6.1. Structural jointness in the action of teaching

6.1.1. Teaching as a two-agent action

It is obvious that teaching both conceptually and factually implies a pupil or at least one who is taught and who conventionally is a human being. In the previous discussion teaching and learning were described in the action language of the purposive-causal theory. Since the teacher and the pupil must somehow interact and work together in order to achieve a common goal, they cannot act as single agents, fully independently of each other. Then the question arises as to how their joint action is possible.

An interaction between several agents can be analyzed in various informative ways. For teaching, interaction is often viewed within institutionalized teaching, which may conflate factual variables with conceptual characteristics of teaching. There is a lot more interaction going on between the teacher and pupils in the classroom setting than is involved in the teaching that is aimed at bringing about learning. A teacher does many things *qua* teacher that are not teaching actions. A partial reason for not coming to grips with the concept of teaching may be that anything that occurs in class may have been included in the concept. Thus, interaction as a general description of the reciprocal relations among the teacher and pupils is not what is called for when teaching is analyzed through joint actions.

If Tuomela is right, the roles of the teacher and the pupil can be analyzed by means of social action concepts. It can be claimed that the behaviour of the teacher and the pupil is based on certain norms set up by their roles, and they partly act in conformity to the norms. This can be

called rule-conforming behaviour, which occurs in any teaching situation and is not confined to institutionalized teaching. In the classroom setting, the number of the norms that the pupil conforms to is obviously far greater than the number of those that are involved in a particular teaching action. Thus there are a lot more variables for an empirical researcher to observe within the classroom setting. The interaction between the teacher and the pupil cannot evidently be derived from their roles. Those roles are too broad in scope and give too weak a link between the teacher and the pupil in terms of teaching.

The social role of the pupil includes many more norms than is necessary for mere teaching. The same is true of the role of the teacher. The aim of the teacher and the pupil in their interaction is to bring about learning. If this is not involved in the actions of the teacher and the pupil, we can hardly speak of teaching. If the pupil follows some other norms connected with the role of the pupil, his behaviour can still be claimed to conform to the role of the pupil. But if he does not act in order to bring about learning, the occurrence of a teaching action can be questioned. There is an obvious difference of rules in norms as to their obligations. Following the rules of social roles is conforming to the norms of the role-based behaviour. Thus, ignoring one or two rules of such roles does not prevent us from observing role-based behaviour. The role exists even though some norm-conforming rules are broken. But stricter rules are required for characterizing teaching. The norms must be obeyed for us to be able to speak of teaching. If such norm-obeying rules are broken, teaching is not conceptually possible. Thus norm-obeying rules become conditions for the concept of teaching.

I think the above discussion shows that the concept of teaching cannot be derived from the roles of the teacher and the pupil. Even if the suitable norm, i.e. bringing about learning, is taken into account, there is a difference between the rules as to how compelling they are as norms. Since the rule-obeying rules are required for the concept of teaching, we may perhaps conclude that whatever social concepts are built out of social action concepts, the job must be done from the outset of a particular social action. Direct derivations between various social concepts are unlikely to be successful. This would mean that it is hardly possible to characterize the roles of the teacher and the pupil merely on the basis of the social concept of teaching.

So we have to start building the concept of teaching from a social action. Teaching presupposes learning, not as a learning outcome brought about by teaching but as an action of the pupil. Teaching then presupposes at least two agents, and an analysis must describe these agents' actions, which again must be mutually related in a relevant way. Since we do not accept mere behaviourism to account for human actions, we assume that intentionality is needed in the action description. When

several agents intentionally act together, they must jointly intend some common goal.

What the teacher wants to perform, is usually paraphrased 'to bring about learning'. Likewise, the pupil's aim to learn can be paraphrased 'to bring about learning'. Both agents aim at the state of obtaining a learning outcome. The teacher and the pupil can be said to have the same goal. But what does this 'same goal' mean? The sense of 'same' is here tougher than in two people saying the same thing in different places, e.g. 'the book is *here*' (cf. Sellars 1968, 188). The tougher sense of the teacher's and the pupil's same goal can be expressed as an intention that a certain state of affairs obtains. However, the goal cannot directly be expressed as an intention to perform the action in the behavioural sense, i.e. as a state of intending. This is shown e.g. by Sellars' operator 'We shall do *X*' where 'do *X*' cannot be replaced by 'bring about learning' to refer to the state of intending. The content of the intention must be distinguished from the state of intending. In other words, the intention with which the agent acts differs from the intention that the agent has in acting.

When a person has an extrinsic desire, it roughly means that he is disposed to think that he ought to act on a duty and to so act. Acting on a duty, however, must also involve a conative aspect (expressing, striving, determination, resolution or something related). Such a conative aspect is typically an intending. Volitional acting cannot occur based on mere belief without conation. (Tuomela 1983, ch. 4.) Thus, the states of intendings must be involved in the analysis of teaching because the extrinsic aim of bringing about learning must be instantiated by such intrinsic aims that lead to the states of intending to perform corresponding concrete actions.

The states of intending to do that which brings about learning are not the same in the tough sense. Thus, the teacher's intending the pupil to do *X* is similar to the pupil's intending to do *X*, but the two intentions are not quite the same. Only the pupil's volitional intending can lead to *his* action. The teacher's intention can only influence the pupil's action through a conclusion of practical reasoning. The technical concept of we-intention is introduced to account for the asymmetry of the intentions in a joint action. We-intending refers to the state of intending, and as such says nothing of the content of the intention that the teacher and the pupil have in common.

Let us consider the definition of we-intention for the collective of a teacher and a pupil:

(WI) The teacher of a collective *G we-intends* to do *X* if and only if
(i) he intends to do *X*, given that the pupil will do his part of *X*,
(ii) the teacher believes that the pupil will do his part of *X*,

(iii) there is a mutual belief between the teacher and the pupil to the effect that (i) and (ii).

This definition serves as the justification of the teacher's intention. The pupil's intention is justified in the same way, by exchanging the terms 'teacher' and 'pupil' in the definition. The we-intention makes both agents' intentions related. In the definition we-intention is viewed as a concept that is partly reducible to an individual concept. It is, however, difficult to solve definitely the issue of conceptual individualism versus conceptual holism. A completely irreducible concept of we-intention does not seem to fit the concept of teaching, as our discussion of the roles of the teacher and the pupil showed.

The distinction drawn between the rules that people conform to and the rules that people must obey as well as the implausibility of the direct derivation of some social concepts from others suggest that the we-intention employed in analyses may sometimes be an irreducible and sometimes a partly reducible concept. Thus Sellars might be right in his claim that an irreducible we-intention is needed for a description of social norms. A partly reducible we-intention is required to build the social concept of teaching out of the social action.

Let us see how the two inference schemas of practical reasoning satisfy the definition of we-intention. The teacher may reason according to (W1) with a conclusion of (iii) 'I will do *X*'. But the alternative (iii') 'I will do whatever I regard as necessary for me to do for our doing *X*' seems to be more suitable because, for teaching, it is the teacher who is more of the authoritative agent and who has the power to initiate the action. The conclusion of schema (W1) generates the teacher's action just as it does the pupil's action. However, it is more natural to refer to conclusion (iii) when it comes to the pupil's inference, although both conclusions are basically similar.

In practice, the teacher is not responsible for his own action only, but he must also take the pupil into account. Therefore, schema (W2) is called for to give a partial other-regarding reason for his doing one or other actions (*Y*). He may reason as follows:

(W2) (i) We will do *X*.
(ii) The pupil is one of us.
(iii) I intend that he will do whatever I regard as necessary for him to do in order for us to do *X*.
(iv) I will do whatever I regard as necessary to bring it about that the pupil does whatever I regard as necessary for him to do in order for us to do *X*.
(v) My doing *Y* is such a thing.
(vi) I will do *Y*.

Schema (W2) seems to satisfy the definition of we-intention as to the teacher's intention to act jointly with regard to the pupil. He does the necessary thing for the pupil to do his part of *X*. Now it may be asked whether schema (W1) is superfluous to the definition of the teacher's intending in the we-mode. If the teacher teaches the pupil a new song, he will first have to present the melody (*Y*) in some form before they can sing the song together and thus do the *X*. Schema (W2) characterizes the practical inference concerning the teacher's intention with regard to the pupil, and the conclusion is the teacher's willing to do *Y*. But doing *X* consists of singing together the new song. Schema (W2) does not lead to the conclusion of doing *X*. Thus (W1) must also be satisfied for the definition of we-intention because (W2) does not commit the teacher to the collective we-intending to do *X*.

For the teacher's we-intending both (W1) and (W2) are satisfied. Then we may wonder if it is possible for the teacher to reason according to (W1) solely, without (W2) being fulfilled. If the teacher and the pupil greet each other, converse, play tennis, listen to a record, etc., schema (W1) may be enough to satisfy the definition of the we-intention. It is evidently due to the *X* and its components being equal to both the teacher and pupil. It is not, however, clear if this joint action falls under the description of teaching. If the polymorphous concept of teaching is taken in its sense of the intention to bring about learning, and not in the sense of the teacher being active in class, the concept implies that the teacher introduces the pupil to something new, something that the pupil does not yet know, or that he needs some refinement of previous knowledge. In such circumstances, the teacher and the pupil are in an asymmetric relation to the knowledge involved in *X*, because it is the teacher who originates the teaching action. Counterexamples may be provided against this view, but if a pupil is the initiator of a teaching action, it seems to me to be a case of learning, rather than one of teaching. Such actions as conversing, playing tennis, listening to a record relevantly instantiate joint actions in which the members of the collective equally participate, but are not necessarily 'teaching that' or 'teaching to'.

If, however, the teacher's intention is to instruct how to converse, how to play tennis, or to introduce a new piece of music, or to demonstrate a composer's work etc., we cannot say that he participates in the joint action of teaching as an equal member of the collective. Therefore, the asymmetry of initiation between the teacher and the pupil seems to require that (W2) must always be satisfied for the teacher's we-intention of teaching in the sense of bringing about learning. In the case of teaching, the teacher's practical inference of (W2) is factually related to the teacher's influencing the pupil's participation in the joint action. Since the teacher's reasoning can become his own willing, it is vital for

the action of teaching that a we-intention satisfied by (W2) exists between the teacher and the pupil.

As for the pupil's reasoning, it is evident that schema (W1) satisfies it despite the possible complex actions of *X*. The pupil infers the conclusion of the schema 'I will do *X*' on the basis of his belonging to the collective of the teacher and pupil. Thus the content of the intention in the state of intending parallels that of the teacher, and the we-intending leads to the joint action of *X*. What about the other-regarding schema? Is it needed? Is it possible or feasible?

If the teacher explains a physical phenomenon, possibly by demonstrating it, the pupil's task is to follow the demonstration and understand the teacher's presentation. This joint action of bringing about learning demands only the pupil's commitment to the collective of the teacher and pupil. Thus the inference of (W1) satisfies the we-intention description. The pupil need not consider the teacher's part of the action in any other way or help the teacher do anything. Therefore, the inference of (W2) is not required.

Let us take another example. The teacher is to introduce new subject-matter to be learned by means of a conversation of instruction. This technique demands the pupil's answers to the teacher's questions for its success. The instruction of the new subject matter is the teacher's part of *X* and the technique of questioning is his *Y*. The teacher's *Y* is not possible without the pupil's answers to his questions. This requires the pupil to make the inference of schema (W2) so as to take the teacher into account and help him do his *Y*. The pupil's answering the teacher's questions is a thing *Y* of schema (W2). But at the same time the pupil must follow and understand the core of the subject-matter that the teacher is trying to communicate. It is the pupil's part of the total action *X*. The pupil's reasoning for the we-intention must be made according to both (W1) and (W2). The example shows that the teacher as well as the pupil must make the inferences of both schemas. The question of which schema or schemas are needed for the we-intention seems to depend on the componental structure of the action *X*.

The teacher's intending of clause (i) is also made conditional on the pupil's action. The teacher cannot perform the social action without the pupil's participating in the action. In colloquial discourse we often speak of teaching and think only of the teacher's behaviour. But this is due to focussing on a restricted aspect of teaching. For the full-fledged concept of a teaching action, we require the pupil's action as well.

The pupil's intending of clause (i) is also made conditional, viz. on the teacher's action. If the pupil alone starts intentionally peforming an action of bringing about learning, we do not speak of teaching, not even in a restricted sense, but of learning. As we noticed before, learning as a single-agent action can be fully intentional, but it is not a social action

performed by means of teaching. The teacher's part of the teaching action differs from the pupil's part to the extent that the former does not conceptually exist without the latter, but the converse is not true.

6.1.2. Teaching as an action of several agents

So far we have discussed teaching as a social action of two agents. In institutionalized teaching, the teacher is faced with several pupils. At school, pupils who are taught together are divided into classes. The concept of class is ambiguous and even vague. It is frequently used as an extralogical concept to describe the administrative arrangement of pupils into groups for teaching. The extralogical concept does not then allow much for analysis. Therefore, the social relatedness of pupils must be based on some social or psychological concepts. The social action concept of we-intention is a good candidate for it, because it does not presuppose prior social psychological assumptions of an organized group. It is only necessary that the collective can share a common intended goal (Tuomela 1983, ch. 4).

When the teacher has many pupils, he will consider himself a member of the collective of all the pupils and himself. He will perform his action X given that every member of the collective will do X. Let us suppose that he is going to give an account of the causes and reasons of the First World War. The pupils' behaviour consists of following the explanation, taking notes, etc. If every pupil carries out his action, the collective or the class has then performed a social action, or, in fact, a series of social actions of U type fully intentionally. In other words, it is a full-blown social action if the definition of we-intention applies to each member of the collective. In practice, there may be pupils who do not do their part, but look out of the window, daydream or do something irrelevant to the teaching action. Can we still speak of fully intentional teaching? In a strict sense, the definition does not allow idle agents. However, if there are pupils in class who do not participate in the teaching action, we can still speak of teaching as an intentional social action, because the very action can be carried out even though some pupils fail to we-intend.

The question may be raised about how many idle agents the social action of teaching allows without being disturbed. For teaching, we can say that the absolute limit of participating pupils is one, which is the case analyzed above. Then the collective that performs the teaching action consists only of a teacher and a pupil. Conceptually, this minimum unit satisfies the definition of an intentional social action. It is an empirical matter how many pupils necessarily must participate in order for us to speak of successful teaching, or before the teacher interrupts his part of the action and does something to redress the situation. The case is a little

different in the circumstances where a number of passengers, say, have to push the bus up the hill. The collective must consist of at least as many people as is necessary to make the bus move. Certainly not only two passengers. Does the difference between the collectives in the two examples depend on the conceptual or factual truth?

To be a social action, it demands at least two agents to perform it. In that sense, the two cases are similar. In principle, two agents might push a bus, although in practice, they do not have the force to do it. So it can be assessed empirically how many agents are needed to move the bus. The difference in the two examples does not lie in the conceptual demand of two agents for an action to be social. The members of each collective share the same extrinsic aims, respectively. However, the intentions in doing X, the so-called conative intendings, differ in contents. The content of a conative intending is dependent on the component part of X that the agent in question intends to perform. This can perhaps best be analyzed by means of the result events (r) of the component actions and their relatedness to the total social action X.

When the passengers push the bus up the hill, the social action is built out of the sum of the result events of each agent's component action ($r_1+r_2,...,r_i$). Conceptually, there is no exact limit to the number of agents needed. Empirically, we can calculate or observe the least number of agents required to do it. In the example of teaching, the results of the component actions of the two agents do not constitute a sum, because both agents actually perform quite different actions which are dependent on each other. The teacher's explaining the causes of the First World War (r_1) is in relation to the pupil's following and note-taking (r_2) so that it can perhaps be described as a product ($r=r_1 \cdot r_2$). However, it is not unimportant in which order the result events are obtained. The r must be equal or contain the ordered concatenation of r_1 and r_2. The pupil cannot perform his component action without or prior to the teacher's action. The asymmetry of initiation is also, of course, manifest in the result events.

Common examples of the concatenations of result events are e.g., turn-taking behaviour, asking and answering, conversing. Playing tennis evidently exemplifies this type but only in part, because it is a more complex social action and also includes a product of the result events. The example of teaching as well as playing tennis could be characterized as social actions which consist of complementary component actions. Teaching, in addition, is asymmetrical so that it consists of asymmetrical reciprocical component actions.

Now to go back to the question of the difference between the two examples of pushing the bus and the teaching of the causes of the First World War, we may conclude that as social actions they differ conceptually and could be put in different type categories. One

differentiating feature has not been mentioned yet. The moving of the bus is causally produced whereas the action of teaching is produced as a conventional result event. To describe these actions as social ones does not make any difference as to whether they are conventionally or causally generated.

The asymmetry of component actions is evidently of importance to the definition of we-intention. As we have noted above, the collective of the teacher and pupil is necessary for the we-intention of teaching in the sense of bringing about learning. If there are more pupils, they will we-intend with the teacher. But is it necessary for the pupil to we-intend with the rest of the pupils? If the aim is to bring about learning, why should a pupil reason with another pupil? The action of bringing about learning is performed with the teacher. Why should a pupil worry about another pupil if his action is not dependent on the latter's action?

Let me give a real-life example, which, it is true, is not strictly speaking a typical action of teaching. However, I think we might quite safely generalize from it to the action of teaching in the sense of bringing about learning. The teacher is going to give a test on a book that the pupils have had to read during the summer holidays. Before the test the pupils, however, learn that it is actually forbidden by Finnish school regulations to give a test on something that has not been treated at school. As a consequence, they decide to protest by refusing to take the test. When the test has started, the class informs the teacher of their decision. The teacher, however, gives some good reasons that it is wise to take the test now and begins to deliver the test papers. First, the class does not react, then one or two pupils read the questions and start answering them. Gradually, all the pupils are taking the test. Now we may ask what we-intentions are needed to account for this social action of taking the test.

We can easily define a we-intention for the social action of the pupils' joint refusal to take the test. The few pupils who withdrew the decision and started to write the test obviously formed a we-intention with the teacher. They perhaps wanted to be loyal to the teacher. Whether it was out of fear or obligation, they at any rate felt themselves to be members of the "teacher's collective". But what we-intention is to describe the social action of the process of the gradual increase of a few pupils giving up the class decision to the whole group taking the test? Do those who follow the example of the first few feel they belong to the collective of the deserters or to the teacher's collective? It may be argued that they are motivated by the others' example, but for the description of a social action of teaching it does not seem to be a correct argument. As such, the pupils' action cannot stand alone but constitutes only a component part of the total social action of teaching, which also includes the teacher's component part.

For an account of the pupils' factual behaviour, we may find some theory or theoretical concept from social psychology. Such a theory might explain the pupils' social behaviour, but for teaching as a social action, we need the logical elements of teaching. Therefore, we cannot exclude the teacher's role in the action. Thus it is obvious that in the final phase of everybody's taking the test, the we-intention must be based on the collective of the teacher and pupils giving and taking the test, respectively. Otherwise, we cannot speak of teaching. Still, an individual pupil's performance is not dependent on the other pupils' performance for the description of the joint action. Therefore, we may claim that pupils do not act jointly, but separately, in taking the test. The jointness of the action is related to the teacher's component part.

I think the above example is clear enough to answer the question posed in the preceding passage. Since individual pupils' component actions are not mutually dependent, there is no justification for the claim that the pupils mutually form the we-ness of the we-intention for the social action of teaching. Instead, each pupil we-intends on the basis of the collective of the teacher and himself. The teacher, in a sense, is a member of many collectives but does not reason for the we-intention required for the action of teaching separately with every single pupil. His we-collective incorporates all the pupils as members, in principle, although the pupil's we-collective consists only of two members.

As an example of factual reasoning in this way, we can cite the teacher's addresses of the class as a whole: "Let's see how the result has been obtained." "Let's sing." "Let's read the text." "Let's talk about the economic development of Ireland." "Come and show the Thames on the map." "Come and write the sentence on the blackboard." "(Let's) write an essay on..." The teacher seems to address every member of the collective, even in cases where only one of the pupils can perform the action. These addresses may evidently lead to joint actions of the entire collective or to joint actions between the teacher and one pupil. But we shall discuss it later.

I do not think there is any inconsistency involved in saying that the collectives consist of a different number of members and still constitute the same we-intention for the social action of teaching. As a matter of fact, the methodological individualism adopted by Tuomela allows at least a partial reduction of social concepts to individualistic ones. This enables one to analyze the we-intention in terms of every individual reasoning for himself. Thus the we-intention keeps its relevance and importance as a social action concept, even though the members of the collective are allowed to do their practical thinking individually through the we-intention. The asymmetrical relation of the members to the we-intention can also be explicated and preserved.

As we saw before, the failure of some pupils to we-intend does not

distort the required we-intention, except in the extreme case of one pupil and a teacher, because they do not jointly we-intend to bring about learning. Nevertheless, the teacher's we-intending is vital to the success of a we-intention. If he fails, there will be no we-intention for the action of teaching, even though all the pupils we-intend to bring about learning through teaching. If the we-intention is seen as a primitive irreducible concept, the distortion of teaching due to the teacher's failure to we-intend cannot be adequately accounted for. An irreducible we-intention would fall under the description of the norms that are only conformed to and not obeyed. As I have claimed above, the concept of teaching must be based on the norms that are obeyed so that a partly reducible we-intention best serves the analysis of teaching.

The above example of test-taking does not only clarify the joint action of teaching but it also serves as a counter example to the claim that the class participating in the action of teaching instantiates a fully-fledged joint social action. The teacher and each pupil jointly perform a social action, but each of the pupils performs his action separately and independently of all the others. Thus, talking of the class doing this or that is a colloquial generalization, which is a way of compressing the information under an extralogical term of conceptual inexactness.

Also, teaching is frequently divided into so-called basic forms on the basis of which of the agents, the teacher or the pupils, have dominance in the factual activities. Accordingly, we may speak of teacher-centred, pupil-centred and co-operative forms. Only activities in which pupils work in pairs or groups instantiate joint actions among pupils. Most often the we-intention is based on the collective of the teacher and each pupil separately, although the co-operation may suggest that the action is jointly performed by each pupil.

6.2. Teaching in terms of logical and strategic acts

The logical acts are performed by the teacher, but they constitute only components of the total action of teaching. The pupil's component actions may be such as making observations, taking notes, analyzing. On the whole, the pupil's behaviour is aimed at understanding and bringing about learning. A we-intention is needed to make the distinct component actions aim at the same goal. Now the difficulty arises as to what the social action *X* really is that the members of the collective intend to perform. The difficulty is due to the fact that we do not have a clear term to describe the joint action other than teaching in the sense of bringing about learning, which may be extended to refer to the pupil's action as well. Using the term 'teaching' is defective because the action can only be expressed in terms of an extrinsic aim, and not as an intention to do the action. Despite the lack of semantic language, the concept of we-

intention is crucial to the description of the social relatedness among the component actions of the total action of teaching.

Green (1971, 8) claims that the logical acts of teaching constitute only a part of what is involved in teaching, because teaching is almost always aimed at getting someone to learn. His claim concerns only the teacher's part of the teaching action. He seems to think that the logical acts can be considered independently of an extrinsic aim of bringing about learning. In principle, this is possible, but I do not think it makes much sense to speak of logical acts without the extrinsic aim in the context of teaching. Green also regards strategic acts as necessary for teaching. For example, a sound explanation in physics may be appropriate for a graduate seminar, but inappropriate to children in the fourth grade. This fact is easy to agree on, but we can ask if it is a necessary condition for the concept of teaching. I do not think it is, and the reason is that consequences of teaching cannot be taken as a logical condition for the concept of teaching.

Green does not use the term 'learn' in our sense of action but in reference to the learning outcome, which becomes clear in his claim that an explanation must also be good in a heuristic sense. What is heuristically good is determined by what succeeds in getting someone to learn, or understand. This is quite a reasonable demand on the quality of teaching. If we are to determine what good teaching is, we may wish to resort to learning outcomes, but for the concept teaching, it is not a necessary condition.

Arguments may be raised against my view because I seem to ignore the learner characteristics in the context of teaching. That is not what I mean. The so-called heuristic aspects must be taken into account, but I think that is done in the logical acts. Whatever explanations, inferences and conclusions are used as logical acts, they are so constituted that they also involve the potential learning aspect in terms of the pupil. This is mainly the teacher's thinking about how the pupil is likely to understand the explanation, inference or conclusion. What is heuristically good, the teacher learns in practice when learning outcomes occur. From his experience, he may then predict what kind of explanation, inference or conclusion is appropriate in a particular situation. Whether the logical acts are correct or not, is assessed on the basis of their logicality, and not on the basis of factual learning outcomes. The reason that this heuristic aspect is only viewed in terms of a potential learning outcome, is the impossibility of finding many logical features about learning outcomes. This is the conclusion that Hamlyn (1978) has come to in his investigations. So an empirical researcher is more involved in this matter than a philosopher.

Green puts the heuristic aspect under the strategic acts of teaching. If we look at the examples of the strategic acts listed by Green (see p. 28),

we may wonder whether they can be characterized as social actions. Since Green does not define the meanings of the terms, it is not clear what he means by them. Some of them can perhaps be interpreted and analyzed as social actions. The difficulty lies in Green's claim that the strategic acts are assessed by their consequences. Then the results are equalized to learning outcomes, which cannot be expressed in the action language. If, however, we view the strategic acts as social actions, we must take them as the teacher's component actions of the total social actions.

A characteristic feature of the strategic acts is that, if they are intentionally performed, many of them can also be done as single-agent actions. But when they are incorporated in the teaching action, they must be social actions requiring a suitable we-intention to be satisfied. Sometimes we speak, for example, of the teacher's motivating his pupils in the sense that the pupils are motivated by the teacher, without his specifically intending that or being aware of it. In such a case, motivation must be regarded as unintentional influence, which may be compared to occurrence of unintentional learning. As such, it does not fall under the action description.

Consider an example of motivating. If the teacher plays a record, shows a film, presents a souvenir, it is obvious that the pupil's component action is needed to describe the social action. Then a technical we-intention is also required to make the intentions aim at the same event. Along similar lines, the examples of counselling, evaluating, planning, questionning, and perhaps encouraging and disciplining as well, may be analyzed as social actions. As a matter of fact, I think that in most cases, the strategic acts must be viewed as social actions. Green's claim that they are assessed by their consequences cannot be considered correct for the action language.

The strategic acts seem, however, to differ from the logical acts in several ways when they are considered in terms of actions. First, the logical acts can evidently be described directly as intentions to do the thing they express, for example: explain, compare, etc. The strategic acts are like intentions in the sense of extrinsic aims, which do not entail the intrinsic aims of the actions, and thus do not result directly in the states of intending. They are similar in character to the aim of bringing about learning. Second, the strategic acts are less directly concerned with bringing about learning. Therefore, they can be said to be subsidiary to the actual teaching. The primary meaning of teaching is obviously to act in order to bring about learning. The secondary meaning can be something like improving the conditions of bringing learning about. The strategic acts aim at the quality of teaching. In practice, they are certainly of most importance, and a lot of attention must be paid to them, but they are not conceptually necessary for teaching. Therefore, we may call them

subsidiary or secondary teaching actions.

6.3. The modes of teaching

The above discussion has treated teaching as a general case without paying attention to what is taught. We have previously made a major distinction between 'teaching that' and 'teaching to'. Within some teaching contexts we are primarily concerned to shape behaviour, to model habits; within other contexts, to shape beliefs or to communicate knowledge. Within these dimensions, more detailed distinctions may be drawn on the basis of various criteria. As a consequence, there occur several concepts that are related to teaching and that emphasize different aspects of teaching. Therefore it is relevant to discuss these related concepts in terms of the social action of teaching. The jointness of such actions is evidently built up in another way between the teacher and pupils.

Teaching may take the form of training, conditioning, instructing and indoctrinating, so these forms can be called the different modes of teaching (Green 1971, 21-33). My aim is not to discuss these concepts thoroughly but to view teaching as a joint action in terms of these modes. We may start from the assumption that these terms differ in meaning and that the corresponding actions are different. We also accept Green's view that the modes of teaching are not reducible to a single kind.

6.3.1. Training

Green (1971, 24) shows that in general the term 'training' may be substituted for 'teaching' in any context where we are concerned with "teaching someone to do...", but that substitution cannot be made with equal ease when we are concerned with "teaching someone that...". Training primarily focusses on shaping behaviour, whereas teaching is a broader concept, also including the transmission of knowledge. On the basis of this, Green proposes a hypothesis that the distinction between the concepts turns upon the degree to which the behaviour aimed at is a manifestation of intelligence. Intelligence is a property which belongs to the behaviour of a person, and not to his muscles or to some organ. The principle followed is that it is easier to use the words 'teaching' and 'training' interchangeably in the proportion that the behaviour aimed at in training manifests intelligence, and in the proportion the behaviour does not manifest intelligence, the term 'training' continues to have application when the concept of 'teaching' does not.

Within the contexts where teaching and training come nearer each other in meaning, both terms serve as extrinsic aims in the formation of

intentions. Therefore, they do not directly express intentions to perform such actions. Also, there is no difference in forming a we-intention for training, in comparison with teaching. The use of the language shows this: the drawing master trains his pupils in drawing or the language teacher trains them in French pronunciation. These expressions do not lend themselves to descriptions of certain intentions to perform actions. Even in an example, "At school they should train children to be good citizens", we refer to a desired state aimed at by teaching.

On the other hand, 'train' is differently constructed in examples, "She trains her pupils to pronounce French consonants", "He trains the boy to answer in complete sentences/to write essays/to read French". There are clear cases where training does refer to behaviour of less manifest intelligence. But there are examples where 'train' can be used of intelligent behaviour. Such an example is the last one with its variations, which suggests that Green's hypothesis does not hold true. The verb 'train' seems here to give the idea of iterative actions before the desired goal is achieved, a nuance that is not implied by 'teaching'. Such training may consist of stereotyped repetitive exercises, but there is training that demands more than mechanical repetitions. For example, training the pupil to write essays or to read French instantiates such repetitive actions, which may be called practice. When teaching involves practice, the teacher's component actions must consist of somehow instructing and guiding the pupil to perform his component actions. The pupil's actions are more of behavioural nature whereas the teacher's part may only consist of verbalizations of advice, if he does not somehow demonstrate the instructions. It is interesting to note that training in the latter case directly leads to the pupils' intentions to perform the very action.

The pupil can train himself without the teacher, but as part of teaching, training requires both a teacher and a pupil. The teacher cannot, however, engage in training without the pupil, which requires a suitable we-intention for the social action of training. Due to the teacher's authoritative role, the initiation lies on the teacher. Nonetheless, the pupil's part of that action becomes more dominant than the teacher's, whereas the importance is the converse in the case of the teacher's explaining or doing any other logical action of teaching. According to the dominance of the component action, the intention to do the action becomes either the pupil's or the teacher's intentional performance, respectively. The minimum of the collective required for the joint action of training consists of the teacher and a pupil, but each pupil we-intends separately with the teacher, since the pupils' actions do not depend on each other's actions.

In one of the examples, a dog is trained, and it is also possible to speak of teaching a dog. If we think of the social relatedness between the

master and the dog, the use of we-intention seems inappropriate because the definition of we-intention is based on practical inference. Can dogs do such reasoning? Whatever goes on in its head, it is clear that the dog must feel some kind of we-ness if it wants to engage itself in the training. Is it an intentional action for the dog, too? Its behaviour, by observation, seems to fit the description. So the technical concept of we-intention does not seem to be distorted, apart from the reasoning. There is nothing strange about this because the terms 'teach' and 'train' are used of dogs. If practical reasoning is not accepted for dogs, we should find other means of explaining the social actions of teaching and training between man and dog.

The above examples of training may sometimes be interpreted so that the teacher only gives an order and the pupil does whatever he is supposed to do. Is that a piece of teaching? Is it a social action if the teacher gives the words, "Do this exercise", for example. Such a case evidently becomes social, because the pupil's performing his action is initiated by the teacher's influence. The teacher is likely to keep a watch over the pupil's action. That is how his component action involves more of relatedness than a mere order giving suggests. If the teacher does not guide or instruct the pupil's performance in any way, the particular social action of training is not, strictly speaking, an item of teaching in its fullest form. However, the action of training may constitute a part of a larger whole that relevantly satisfies the description of teaching.

6.3.2. Conditioning

Green's idea is that the central feature of teaching is that it focusses upon the display of intelligence. Along that continuum, we proceed from training to conditioning. It is however difficult to apply the idea of teaching to conditioning. (Green 1971, 25.) As a rule, two kinds of conditioning are distinguished: classical conditioning associated with Pavlov, and operant conditioning associated with Skinner. Classical Pavlovian conditioning is based on the substitution of one stimulus for another. It is fairly generally agreed that classical conditioning, if it occurs at all, has very limited occurrences. Classical conditioning is confined to responses and reflexes which do not require any rationality. Green seems to have classical conditioning in mind solely when he speaks of the lack of intellingence in the behaviour. Conditioning in this form does not fit our concept of agency, because no intentionality or understanding is required of one who is conditioned. Besides, learning, if it occurs, is viewed as a learning outcome in the concept of classical conditioning. It seems difficult to argue for that as a mode of teaching.

In Skinner's operant conditioning, an operant is a form of behaviour 'emitted' by an animal rather than elicited from it by a stimulus. It can be

perpetuated in a given situation by suitably rewarding the performance, so that the behaviour is linked thereby to the situation. Skinner believes that all behaviour, including verbal behaviour, is learnt in this way. If his theory is taken seriously, it says of animal behaviour that what an animal does when it has learnt to behave in a certain way is construed as the product of a series of causally connected reactions. Such learning explains conditioning.

Hamlyn (1978, 26) does not consider operant conditioning similar enough to classical conditioning to deserve the title 'conditioning'. Hamlyn claims that when an animal learns to do something it really comes to *know how* to do that thing. It is not only a question of coming to be able to do something, because that need not be the result of learning. Many animals can do things, even things that they could not do when they were born, as the result of maturation without learning entering into it. Hamlyn's point is that there is an intimate connection between the concepts of knowledge and learning. (Hamlyn 1978, 26.)

Operant conditioning has been much discussed and favoured in education. Many teaching devices have been built on Skinner's notion of an operant or chains of operants. The pupil's wrong responses get no or negative reinforcement, whereas right responses are positively reinforced. Desired behaviour is reinforced by suitable rewards, or undesired behaviour weakened by suitable punishments. Here it is mainly the teacher's arrangements of learning situations that take the form of the teaching component. As to the pupil, the rationality both of his behaviour and of his engagement in it is deflated because emphasis is put on the reinforcement of desired behaviour.

In his analysis of whether conditioning is learning, Vesey (1967) rejects classical conditioning as learning. He also views operant conditioning, by asking, 'Could we have been *caused* to do the sort of things we have in fact have learnt to do?' He tackles the question on the basis of the action/happening argument. Vesey argues that we may answer the question positively "if by our having been conditioned is meant no more than that we acquire the abilities in question under certain conditions, and not others." This conclusion suggests that producing these conditions is part of teaching. But the problem still remains whether the operant learning is to be described in action language. Sometimes operant conditioning is called instrumental conditioning. Vesey considers it a misnomer "if it is taken to mean that the subject requires either that, or how, its response is instrumental in its obtaining the 'reward'." In such a situation, more is involved than simply its being conditioned. If operants must be seen as not known to the learners, it is questionable whether they can be applied to agents' intentional actions. In this case, we must reject classical conditioning as well as operant conditioning as modes of teaching.

6.3.3. Instruction

Instructing is so closely connected with teaching that in most contexts teaching can be substituted for it. However, all teaching is not instructing, even though the converse is true. Green (1971, 28) characterizes instructing as distinguished from training by claiming that instructing involves a kind of conversation, the object of which is to give reasons, weigh evidence, justify, explain, conclude, and so forth. This form of teaching allies instructing more closely with the acquisition of knowledge and belief, and thus with the quest for understanding, than with the promotion of habits.

We may train people to do things even though we do not try to make them understand what they do. For example, pupils can be trained to write their essays on every second line. They need not know, however, that this is done to enable the teacher to write his corrections in the empty space, or for some other reason. Instructing, again, requires necessarily that an attempt is made to bring the pupils to some understanding. This makes Green argue that "instructing always involves matters of truth and falsity, whereas training does not...teaching is essentially the pursuit of truth...The pursuit of truth is central to the activity of teaching because instructing is central to it." (Green 1971, 28.)

Communication required for instructing includes giving reasons, evidence, argument, and so forth, for the purpose of helping another understand or arrive at truth. Scheffler (1960) makes the point with respect to the concept of teaching, but it can, in fact, be made with respect to the concept of instructing as Green does.

"To teach, in the standard sense, is at some points at least to submit oneself to the understanding and independent judgment of the pupil, to his demand for reasons, to his sense of what constitutes an adequate explanation. To teach someone that such and such is the case is not merely to try to get him to believe it...Teaching involves further that, if we try to get the student to believe that such and such is the case, we try also to get him to believe it for reasons that, within the limits of his capacity to grasp, are *our* reasons. Teaching, in this way, requires us to reveal our reasons to the student and, by so doing, to submit them to his evaluation and criticism. ... Even to teach someone *to* do something (rather than how to do it) is not simply to try to get him to do it; it is also to make accessible to him, at some stage, our reasons and purposes in getting him to do it. To teach is thus, in the standard use of the term, to acknowledge the "reason" of the pupil, i.e. his demand for and judgment of reasons, even though such demands are not uniformly appropriate at every phase of the teaching interval." (Scheffler 1960, 57-58.)

From the above characterization of instruction we can conclude that there cannot be one single way of instructing, but various methods will

satisfy the description of instruction. The concept of method is ambiguous in its pedagogical sense, but we need not bother about this, because the point is that various actions can be taken under the heading of instruction.

The fundamental aim of instruction is to show explicitly the truth of a given phenomenon to the pupil. The pupil is to see the truth or the reasonable belief or the justified behaviour. Thus, the social action *X* of instruction consists of making it plain that a certain state of affairs is truthful or reasonable. If we take a conversation of instruction as an example, we shall notice that the pupil is also intending to pursue the truth when he participates in the conversation, i.e. he tries to understand the inferences made and on what basis they are made. The intention of the joint action of both agents is to pursue the truth about a particular phenomenon, and that intention is expressed as a we-intention to participate in the conversation instruction.

It is self-evident that a conversation of instruction is a joint action because the teacher cannot perform it without the help of the pupil. However, it is possible to think of an item of instruction which takes place as a monologue of the teacher who asks and answers questions himself. The pupil's task, then, involves following the exposition and trying to understand the truth or reasonableness of the subject. Such an item of instruction is a joint action if the pupil also we-intends to do his part of the joint action.

If the pupil does not behave in any overt way, can we still say that the teacher is instructing? Such a demand is too strict if the behaviour is understood as some kind of observable bodily movement, because there are a lot of social actions in which some agents may only perform their component parts in their minds. Listening to a talk and attending to a live performance exemplify such actions. The decisive criterion of jointness cannot be an empirical observation of overt behaviour. Therefore, we must accept that attending to a performance and following a monologue of instruction conceptually require a we-intention to single out the jointness of the action. Without the existence of a we-intention, we cannot strictly speaking regard instruction as a social action.

There is another problem with instruction. If the content of the intention of instruction is to pursue truth and bring about someone's understanding it, how do we know that the joint action is instruction in the sense of teaching, and not some other action, such as a general presentation of the subject matter to an audience? We have so far paraphrased the intention of teaching as the intention of bringing about learning. But we have no expression of learning for the concept of instruction if the intention is to pursue truth. The question we may ask is what relation pursuing truth has with learning.

To use the well-known distinction made by Ryle (1949) between the

'task' words and 'achievement' words, we note that pursuing truth, and learning in the sense of action, are task words insofar as they do not express that something has obtained. Rather, they refer to the activity of an attempt so that the result of such an action is not necessarily the truth that was found or the learning outcome that obtained. This entails that, as the aims of actions, they cannot serve as intrinsic but as extrinsic aims. Therefore, actions that fall under the description of pursuing truth and learning can vary in their behavioural parts.

If the teacher's aim is to explain a phenomenon, and the pupil's aim is to follow that presentation with intent, we can form a we-intention to describe the common goal of the social action of instruction for the purpose of pursuing truth. The result of the joint action is the occurrence of the teacher's explaining the phenomenon and the pupil's actively following the explanation. Whether the pupil understood the explanation is less relevant to the action description, even though it is the desired goal and a probable consequence. If the teacher explained the phenomenon convincingly and with correct logic, the truth was there to be seen. If he made a mistake or error of logic, can we say that he instructed, or do we have to claim that he failed to instruct?

If the we-intending of the teacher's explanation and the other conditions of the purposive-causal description of that social action are satisfied, the action is conceptually defined as an intentional social action. If these conditions are fulfilled, we can say that the action of explaining occurred. The logical correctness of the content of the explanation is not at stake in the definition requiring us to give a positive answer to the question whether the action of explaining occurred or not.

So far we have claimed that the joint action of explaining occurred if the certain conditions were fulfilled. But is it possible to deny the same action as a piece of instruction? From Green's and Scaeffler's arguments we have attributed the question of truth and falsity to the concept of instruction. If we say that "A instructs that Q", we actually assert that Q is true. If we are mistaken about the truth of Q, we must also be mistaken in claiming that someone instructed. In other words, "A instructs that Q, and Q is false" is self-contradictory. On the basis of this analytical truth, we have to claim that if the teacher who, in explaining the particular phenomenon, made an error of logic, he did not instruct in the proper sense of the word, even though he performed his part of the joint social action.

Did he teach the particular phenomenon? I think it is possible to answer the question negatively, too, because 'teaching that' comes to be used in the sense of 'instructing'. Teaching is nonetheless ambiguous here, and in the context of indoctrination, we shall note that it is possible to say 'teaching that', even about falsities. But is there any sense of teaching that can be used of the action of explaining that has been

defined as a joint social action? Yes, in the sense of action. This sounds like a vicious circle when teaching is claimed to be a social action in a generic sense, and certain areas are distinguished from it which are not sufficient for the requirements of a particular action of teaching. The explanation lies in the fact that specific features have been distinguished from the concept of teaching that constitute additional conditions for the definition of teaching. At the basic level, teaching is a joint social action, and as such it says nothing of the content of the things to be taught. Nonetheless, all modes of actions can be built out of social action concepts, even though all modes of teaching cannot be completely determined, without adding some further conditions. Such an additional condition is the question of truth in the context of instruction.

It may seem somewhat stipulative to attribute truth and falsity to 'instructing' if it is not attributed to 'teaching'. I do not think this is a casual but an inherent part of the concept because instruction involves communicating knowledge in a particular way. All languages do not express this aspect with separate terms, but that sense is incorporated in the concept of teaching. For example, the Finnish language has no particular word for instruction, even though the meaning of communicating knowledge is clearly to be discerned in the word for 'teaching'. Then it is also implied that truth is somehow involved. Thus the English language is lucky enough to provide a specific term 'instruction'.

Here we may note what Hart (1976) claimed about analyzing teaching. He wanted to deny a neutral description of 'what teaching is' because a methodologically relevant analysis always involves the question of 'what good teaching is'. If his claim is taken to mean pursuing the truth of instruction, we may agree with him, because that condition also influences how teaching is to be performed. But if his claim refers to other values in terms of aims, I cannot accept the view that they constitute the necessary conditions for the concept of teaching.

We have not yet definitively answered the question about how 'bringing about learning' is involved in instruction. If instruction is taken to mean pursuing truth, the teacher is assumed to act along these lines, i.e. to argue, give reasons and evidence, and so forth, in a logically correct way. Pursuing truth is bringing about learning in the sense of seeking after truth. If the truth is found, it will be a learning outcome, because a knowledge of the truth has been obtained. It is obvious that we cannot learn something that we already know. When we gain some knowledge, we learn. Thus pursuing truth is aiming at knowledge, i.e. bringing about learning. This is the extrinsic aim of instruction, seen as the teacher's component part of the joint action.

The pupil's component part in instruction is to follow with intent the the teacher's pursuing truth. The common goal of pursuing truth can be

expressed in the we-mode to account for the jointness of the action. As we saw above, the correct definition of the joint action did not determine the concept of instruction adequately, but the criterion of truth was called for. As for the pupil's part in instruction, we must content ourselves with the action description, because there are no logical criteria that might be required for truth pursuing from the standpoint of the pupil. Although the teacher's aim is to bring the pupil to understanding, we cannot decide whether instruction occurred or not on the basis of the pupil's understanding, because this is a psychological concept and cannot be assessed logically but empirically.

A more interesting case is a conversation of instruction, which requires the pupil to participate actively in the joint action, as reflected in the overt behaviour of answering. This dialectic procedure by questions and answers is sometimes called the Socratic method. The teacher's questions are dependent on the pupil's answers just as the pupil's answers are dependent on the teacher's questions. Now we may wonder if this interdependence of the component actions has implications for the pursuing truth of instruction. The teacher naturally has a plan of the route to the truth. He attempts to elicit from the pupil answers that serve as evidence or reasons for the knowledge aimed at. But the pupil cannot give his answers if he does not understand the logical development of the conversation. In other words, any answer whatsoever to the question is not adequate, although answering as such may satisfy the definition of his performing his component part of the joint action.

In saying that a pupil must understand the development of the argument in order to be able to answer the teacher's questions, it is worth noting that we have called for a learning outcome, in the form of understanding, to satisfy the action description. Earlier we argued that psychological concepts cannot be required for the logical description of an action. I do not think we are inconclusive here. The discrepancy is caused by our characterizing the factual action as an example. Conceptually, it is naturally assumed that the logic between the questions and answers are mutually conclusive and form a coherent item of conversation. This is not dependent on the pupil's factual understanding the total subject matter. Thus, we are not presupposing that a probable consequence from the conversation of instruction is a condition for the correct description of the action. In practice, the pupil's understanding of the argument is a prerequisite to the successful conversation of instruction.

It is evident that the social action is logical if it satisfies the action definition. But what about logical errors that may occur in the pursuit of truth during the conversation of instruction? We have noted that if the teacher makes a logical error, we cannot conceptually speak of instructing. What about the pupil's logical errors? If the pupil makes a

logical error, the teacher tries to help him somehow, either by giving more hints, going back to something previously discussed, making additional guiding questions or by any other means that may bring the pupil to understanding about what he is expected to answer. Thus the logical correctness of the pupil's answers is controlled by the teacher. This also guarantees that falsities do not distort instruction. The pupil does not seem to have the decisive role in the logicality of instruction.

If a pupil makes an error and the teacher does not notice it, but continues to develop the conversation, we cannot logically speak of instruction. If the teacher makes a mistake, it may be possible that the pupil notices the mistake, and, in a way, saves the situation for instruction. As this last example shows, even the pupil can be vital to the success of instruction. This mutual controlling of the logicality guarantees that we can speak of instruction. The conceptual truth of instruction is nonetheless independent of empirical observations. This example, however, shows that any of the component actions also involves logical truth in the context of instruction.

Nevertheless, the we-intention needed for the joint action of instruction is based on the teacher and pupil intending to participate in the conversation. That intending leads to the agents' asking questions and answering them, respectively. In order to perform the action of developing the argument, the agents must we-intend to develop the argument. This can naturally be done in the action language. But the joint intending to perform the action is not confined to developing the argument only. Likewise, the result of the action is not confined to the occurrence of developing the argument, purposively caused by the intention. The intention must also embrace the question of truth in its content. Similarly, truth must be involved in the behavioural result of the action.

We might think that the bifurcated nature of the intention is due to the difference between extrinsic aims and intrinsic aims. The fulfilment of extrinsic intentions is not directly caused by the actions, i.e, they are not the purposively caused results of the actions but probable consequences of the actions. As such, they are not sufficient conditions for actions. But can developing the argument be an extrinsic aim in the conversation of instruction? I do not think we can consider it an extrinsic aim because it is a particular way of presenting propositions, and thus performing an action. We can set certain conditions for the logicality of the mode of presentation. This is why we cannot speak of an argument development if it is not correctly done. The correctness is dependent on the truth of the argument. Thus the question of truth is involved in the correct action description.

The fundamental claim that it is impossible to know something that is not the case has its implications for instruction. As a consequence of an

argument development in the conversation of instruction, the pupil comes to know the truth, i.e. he knows something that cannot be false. If he has come to know, he has learnt the truth. So he has learnt something that cannot possibly be false. Having learnt resembles propositional knowing. In this sense, learning is not a psychological but a logical concept. In the action description of instruction, the result of the pupil's action is having learnt, but in the logical sense, not in the sense of a factual learning outcome.

That truth becomes part of the action description is likely to be caused by the nature of the intelligibility of an action. Therefore, we may claim that, though a we-intention provides a necessary condition for a social action, it may need some elaboration in the context of more complex social actions. When the complex social action *X* is not taken only as the structural element, but it is also given a semantic interpretation, as in case of instruction, we may have to determine additional conditions for the correct action description. Given an additional condition, it also has its consequences for the definition of we-intention.

The above somewhat lengthy discussion has shown that pursuing truth is a form of bringing about learning. Discovering the truth is similarly a form of a learning outcome. Nonetheless, learning also involves leaving permanent traces on human memory. This is perhaps not brought about only by the event of discovering and understanding the truth. For example, repetitive exercises may be one way of trying to imprint an achieved learning on the memory. Thus various forms of practising become part of teaching. They are not, however, teaching in the sense of instructing something new, something that the pupil has no knowledge of. Nevertheless, if practising means that the knowledge gained through instruction is applied in practice, there is something new involved in the activity so that it approaches the very essence of teaching. In foreign language teaching, for example, the knowledge of the symbols and their networks are put into practice by means of communicating different subject matters through those symbols. That is learning something new with respect to the knowledge of the formal system of the symbols.

Instruction is not only communicating knowledge but also transmitting beliefs. In instruction, beliefs are made acceptable on the basis of reasons and justifications. In this case, we are not concerned so much with truth but with the reasonableness of beliefs. The important thing is not *what* is believed but *how* it is believed (Green 1971, 46). To explicate how beliefs can be held, Green makes a distinction between evidential and nonevidential beliefs. "When beliefs are held without regard to evidence, or contrary to evidence, or apart from good reasons or canons for testing reasons and evidence, then I shall say they are held nonevidentially. It follows immediately that beliefs held nonevidentially cannot be modified by introducing evidence or reasons. They cannot be

changed by rational criticism. ... When beliefs, however, are held on the basis of evidence or reasons, they can be rationally criticized and therefore can be modified in the light of further evidence or better reasons. I shall say that beliefs held in that way are held evidentially." (Green 1971, 48.)

It is central to instruction to transmit evidential beliefs and shape behaviour accordingly. If evidence and reasons are not discussed in connection with teaching beliefs, we are not talking of instruction. What is the common goal of the we-intention in instructing evidential beliefs? Obviously the aim is to make the beliefs acceptable on the basis of evidence. If the teacher performs this instruction chiefly as a monologue, the pupil's intention involves his following the teacher's argumentative instruction, and the learning outcome will occur in the form of his accepting the beliefs. The pupil's overt behaviour is not very marked in this instance of instruction. As far as the teacher's part of the joint action is concerned, it is of importance that the reasoning is made conclusively, and in that sense, it must be truthful. If the teacher fails to do this, we cannot speak of instruction.

If evidential beliefs are transmitted through a conversation of instruction, the pupil must engage in the treatment of evidence by answering the teacher's questions. Now the pupil's part also becomes vital to correct reasoning on the basis of evidence. Correct reasoning will constitute an additional condition for the action *X* when evidential beliefs are instructed. We do not need the truth condition as it was in the case of knowledge, but we need a guarantee that the inferences in reasoning are made in a logically correct manner. The additional condition is not directly so much as to what is believed as to the logical presentation of reasons for a particular belief.

So far we have dealt with knowledge as an unproblematic concept. Although I shall not discuss it thoroughly, certain aspects of truth have to be mentioned in this connection. There has been a lot of discussion about the relatedness of knowledge and belief. Sometimes knowledge is claimed simply to be a form of true belief. Green argues for the view that knowing and believing are categorically different concepts. It is a common philosophical view that for someone to have knowledge, not only the truth condition but also two others must be satisfied, viz. the evidence condition and the belief condition. In order to assert truthfully that A knows that Q, it must be true not only that Q is true but also that A believes Q and A has some evidence that Q is true. When we attempt to describe the conditions under which it is reasonable for A to believe that Q, we arrive at the evidence condition and the belief condition, but not the truth condition. (Green 1971, 68-71.) As we have noted earlier, there is a truth condition for knowledge, but now we note that there is none for belief. This conclusion makes Green present the following

proposition about knowledge: "It is impossible to know what is false, but it may be reasonable to believe what is false" (Green 1971, 102). In considering what is reasonable for someone to believe, the evidence condition becomes important, not the truth condition.

Research is frequently described as the search for new knowledge, but more to the point described, it is the quest for what is reasonable to believe. What is reasonable for me or for any particular person to believe is a function of the knowledge and experience available to me or to that particular person. This is the "subject sense" of the phrase "what is reasonable to believe." The "object sense" of the phrase is not dependent on any particular person but is a function of the knowledge, experience, and evidence available to mankind at large. (Green 1971, 103.) In the philosophy of science, this sense of objectivity is demanded of research. Instead of the ultimate truth, it must produce intersubjective knowledge.

The distinction made by Green is important for instruction. Since we do not instruct mankind in general, but a particular pupil, instruction aims at transmitting reasonable beliefs in such a way that they become reasonable for a particular pupil. This analysis makes Green conclude that the primary philosophical category for teaching is not knowledge but reasonable belief (1971, 103). Here, the usual interpretation that instruction has to do with transmitting knowledge has been questioned for philosophical reasons. Also, practical reasons can be presented against this narrow view, because it largely limits things that can be taught. There are vast areas of human concern which we do not regard as knowledge at all, such as wisdom, insight, and arts.

6.3.4. Discovery learning

It might be claimed, as has been done, that learning by discovery is not teaching, because the teacher does not teach: the pupil finds out everything for himself. I wish to advocate that discovery learning is a form of teaching. Instruction and learning by discovery are frequently set in sharp contrast to each other, though both are concerned with knowledge and its transmission. If we analyze learning by discovery on the basis of the term 'discovery', we come to the conclusion that one who has made a discovery has found out the truth. As an achievement word, 'discovery' implies a state of affairs that is necessarily true; in other words, a false discovery is a contradiction. Finding out truth entails the occurrence of a learning outcome. Indeed, Kleinig (1982, 44), for example, comes to grips with this view: "While instruction *may* result in learning, 'learning by discovery' *necessarily* does. One may instruct in what is believed to be false, but one can discover only what is believed to be true."

In general, a person learns a lot of things in life without being taught,

and a great part of it is done by discovery. Chance is, however, involved in such learning outcomes. Once something has been discovered, it necessiates that the discovery made must be true. This is clearly a valid conception in terms of a learning outcome. But is it valid about such school subjects as science or mathematics? A negative answer is possible in the case of mathematics, because its concepts and truths are not even empirical. A discovery seems to be as contingent an occurrence as any other learning outcome.

Dearden (1967) attacks the assumptions that lie behind learning by discovery. In particular, he criticizes abstractionism as a theory of concept formation. The teacher contrives situations or presents materials which are so structured that appropriate experiences are provided for the children. In such a situation it is assumed that a child will see the common features of certain things or some relationships between them and abstract them.

Since any situation may be conceived in a variety of ways, we may wonder why the teacher's conceiving it in one particular way is so unique that children also come to conceive of it in that way. In providing the pupils with structured materials, for example, the teacher offers them concrete instances or models of things that they have to learn. But the pupils do not possess the concepts that enable them to see the materials as examples or models "because an example, or a model, or an instance, or a feature, is always an example, model, instance, or feature *of* something, and unless you know what follows this 'of' you logically cannot perceive the thing *as* an example, model, and so on." (Dearden 1967.)

Since abstractionism must be rejected and learning by discovery displays contingent occurrences, it is not reasonable to view discovery learning as an outcome for action description. Attempts to make discoveries can be described in the action language, in which the term 'discovery' refers to the process of discovering. A person may engage in bringing learning about by means of a discovery method, which then exemplifies learning as a single-agent action. When he is guided by a teacher, we can speak of a joint action by means of a discovery method. Thus learning by discovery has come to mean a method of teaching.

In the educational literature, less extreme conceptions of learning by discovery have usually been presented. At one extreme, there is an almost completely unstructured situation in which pupils are more or less left to find out things for themselves. Neither problems nor methodology nor data are provided. At the other extreme, the problems, methodology and data are provided. The pupils' task is to apply the methodology to the data in such a fashion that the problems will be solved. In practice, discovery methods tend to be nearer the latter end of the spectrum.

As a joint action, the pupil's discovering is helped by the teacher, who questions, discusses, hints, suggests and instructs what to do to find out. This way of teaching differs from instruction "because what has actually to be learned is not imparted. The stress is on the individual's mastery of knowledge, so that throughout all this teacher activity what the teacher says is specific enough to focus attention and effort in the desired direction, but at the same time open enough to leave genuine discoveries still to be made, discoveries which the teacher can be reasonably confident will be made on the basis of what he knows has already been learned in the past and the deliberate guidance he is now giving." (Dearden 1967.)

The joint action of a discovery method must involve the we-intention of the agents to participate in bringing about learning. The pupil we-intends to make discoveries according to the teacher's guidance, and the teacher we-intends to do his part in making discoveries by guiding the pupil to find out. The behavioural level of the total action will be realized when the conditions of we-intention are satisfied. But are any additional requirements needed for the description of the discovery learning? As we noted, the discovery methods vary to a great extent as to how structured the material or the teacher's control over discovering is in the action. The process of discovering is a complex action, which consists of many components. Their mutual dependence, as well as their dependence on the teacher's component actions, evidently sets different conditions for the correct action description. This is due to the concept of discovery teaching, which is not only an ambiguous but a vague concept.

If discovery methods are so varied, we may wonder whether they differ from instruction in kind or in degree. In instruction, the teacher's aim is to transmit knowledge or evidential beliefs. The use of discovery methods can be said to aim at the same goal because the pupil is given the opportunity to find things for himself, i.e., the knowledge or beliefs are based on evidential reasoning. Both in instruction and in discovering methods, the pupil must understand what is being instructed or what he finds out when he is discovering things. So the psychological concept of understanding seems to be the same. The conditions of truth or logical correctness were set for the concept of instruction. This was required of the instructing teacher, and in a conversation of instruction, it was also required of the pupil's answers. Do the conditions of truth or logical correctness play any part in discovery methods?

Discovering as an action does not seem to require truth to satisfy the action description. But if the teacher leads discovering very firmly, it is obvious that the action does not go on if the pupil does not discover properly. The teacher's control over the discovering process is obviously the dimension that is decisive for the requirement of additional conditions. The more controlled the separate components are, the more

is required of the correct component action. In a conversation of instruction, the teacher's control is very firm because only the pupil's correct answers will lead to uninterrupted instruction. On the other hand, when the pupil is left with a problem to be solved, the pupil's individual componental actions need not satisfy the condition of truth for the concept of discovery learning, even though factual proceeding does not take place without the pupil's making discoveries. This is manifest in the nature of discovering, which partly involves trial and error in its procedure.

The teacher's control is a necessary condition for the joint action of teaching so that without it there is no teaching. But to separate instruction, a conversation of instruction and discovery methods does not seem to lead to separate categories of control. Rather, the distinction is drawn within the mode of instruction and appears to be one of degree, and not of kind. While the teacher's complete control over teaching is instruction in its strictest form and leads to the teacher-centred joint action, the gradual decrease of the teacher's control leads to the pupil-centred joint action. At the same time, the additional conditions of truth and logical correctness of individual componental parts of the joint action vary from the necessary to the unnecessary. Why is it so? Since the process of the total action is dependent on the contents of the separate componental actions, the conditions of truth and correctness enter into the requirements.

A conversation of instruction exemplifies verbal instruction in which the componental parts must be true or logically correct, i.e. the teacher's questions and the pupil's answers are necessarily conclusive if we are to speak of instruction. When discovery methods are utilized, the intention to do *X* may consist of componental parts that are not verbal and depend on some discoveries. If the teacher's control is not an inherent part of the process all the time, there is room for making errors or false observations. So the conditions of truth and correctness are not conceptually necessary for discovery methods. In practice, the teacher's surveillance may lead to minimizing faults so that it factually seems as if the conditions of truth and correctness were present at every moment.

To summarize the above discussion, we may conclude that discovery methods do not differ categorically from instruction, although truth conditions may differ in some instances of instruction, due to the various amount of teacher control. Learning by discovery allows more room for individual differences and enables the pupil to know what he is doing. On the other hand, greater chance enters into learning in the form of learning outcomes, since things are left open for discovery, and it is quite possible that they are not discovered at all. But, is it very different from any other learning outcomes? As we have noted many times, learning outcomes are not directly caused by teaching events. In instruction, it

may be possible that the pupil only needs to attend to the teacher's exposition; in fact, that form does not involve any better guarantee that the pupil understands the presentation than in his attempting to discover the truth for himself. As for learning outcomes, they must always be controlled afterwards, whether a discovery method or instruction is practised.

6.3.5. Indoctrination

Indoctrination is often given a negative evaluation. No doubt there is a use of 'indoctrination' in which it means 'imbue with or *with* a doctrine, idea, or opinion' according the Concise Oxford Dictionary. One comes to think of an indoctrination programme as part of a soldier's training, and this is often seen as a desirable aim. The acceptance of such a use is normative. But a negative value is also built into the very concept of indoctrination. In the educational literature, four ways of isolating the concept have been suggested: reference to the (1) content, (2) methods, (3) intentions, or (4) outcome of what is communicated to others (Kleinig 1982, 55).

The content-criterion is based on the etymological considerations of doctrines. The etymological argument becomes weak if we think of the changes that have taken place from the original meanings of words to the modern ones. Another approach is to view the grounds of doctrines. Gribble (1969) characterizes the notion as "a body or set of beliefs which rest on assumptions which are either false or for which no publicly acceptable evidence is or can be provided." This is not a very good definition in the light of what was said above about the truth of knowledge and reasonable beliefs. On such a basis, it is not possible to demarcate indoctrination in an unambiguous way.

When reference is made to methods of determining indoctrination, there is a danger of confusing methods with techniques. A set of techniques for altering people's outlooks or beliefs may utilize anxiety, fear, drugs, group pressure, enforced isolation and so forth. Brainwashing, for example, might make use of such techniques. Kleinig (1982, 58) regards brainwashing as a severe form of indoctrination. I do not think his claim is quite conclusive. He appears to make a method identical with a technique and can thus be blamed for committing a category error. In education and pedagogy, a technique is linked to the manner of transmitting something or with the mechanical skill required to achieve one's purpose in a way that pays no attention to the contents. A method incorporates the contents with the mode in which they are transmitted. A method is more of a principle in nature and cannot be reduced to a single technique. In fact, a method enables the use of

various techniques. It is quite possible to transmit a true belief or some skill in an unacceptable technique of brutality. The technique has little or no relevance to the contents of teaching, whereas a method compels one to consider the contents of what is to be taught in relation to the mode of presenting the contents. A tehnique emphasizes the manner of transmission whereas a method emphasizes the manner of introducing the contents. Thus, a method cannot be brutal, though a technique can.

It may appear too stipulative to characterize a method and a technique in the above manner, in particular when there is not very great agreement about those terms in pedagogy. The characterization, even though somewhat sketchy, serves the purpose of distinguishing the brutal techniques from the methods perspective of indoctrination. Indoctrination involves various indoctrinary methods, of which propagandizing and censoring are examples.

What is it that makes a particular method indoctrinary? Sheehan (1970) gives the account of indoctrination as constituted by "those methods which induce beliefs in a way which by-passes the reasoning process of the person to which they are applied, or coerce his will and are systematically applied over a prolonged period." This characterization is not quite unambiguous, but it seems to refer to a method in the sense discussed above, even though it also appears to involve a hint of a technique.

Kleinig (1982, 58) argues against this definition by remarking that those who are most indoctrinated can produce an impressive defence of their position. But this is completely beside the point. The reasoning that the above definition mentions refers to reasoning at the moment of indoctrination. It is quite another matter to speak of a person who is indoctrinated and who then is capable of well defending his standpoint. The procedure of indoctrinating and the outcome of indoctrination are clearly distinct matters. Green has noted this and accounts for the difference that arises in the *use* of reasons and evidence. "An indoctrinated person will tend to use argument, evidence, and criticism not as an instrument of inquiry, but as an instrument to establish what he already believes. He will use reason, not as a means of investigation, but as an instrument of persuasion." (Green 1971, 50.)

There occur varied formulations of indoctrination in terms of intentions. Kleinig (1982, 60) proposes the following version as plausible: "a person indoctrinates if and only if he/she intends the beliefs he/she teaches to be held regardless of the evidence." On the basis of this formulation, Kleinig analyzes and criticizes the approach to indoctrination in terms of intentions. It is not important to follow his discussion because I think the formulation itself is built on an implausible foundation. Kleinig's version suffers from the conflation of a learning outcome with the teaching aim. To hold a belief whether

evidential or not is a learning outcome, whereas the aim is to teach those beliefs. An action of teaching becomes indoctrination if the intention is to indoctrinate, but being indoctrinated cannot be an intention of teaching. The issue will apparently be centred around the question as to whether the intention of indoctrinating incorporates both the extrinsic aim and the intrinsic aim of the action.

In accordance with his view of the importance of the learning outcome, Kleinig considers the outcomes-criterion the most plausible for defininig indoctrination. "Simply stated, it is that indoctrination is teaching in which the beliefs, attitudes, values, etc. taught are held in such a way that they are no longer open to full rational assessment." (Kleinig 1982, 62.) I think it unnecessary to repeat the arguments against such a view as it was shown before that learning outcomes cannot be incorporated in the action description. Let me only point out that it sounds odd to analyze indoctrination by means of indoctrinated persons because, after all, indoctrinating is teaching, not learning. Analogously, teaching should be analyzed by means of learned persons, which is nonsense, or by means of persons taught, which is not a much better conclusion.

By choosing the outcomes-criterion, Kleinig is compelled to condemn indoctrination on some more or less arbitrary basis because various normative reasons are presented to reject indoctrination as an abuse. But it is more important to find conceptual, less normative grounds if indoctrination is to be avoided. Green seems to come nearest to the point when he characterizes indoctrination compared to instruction. "Instructing is transformed into indoctrinating when the concern to transmit certain beliefs because they are reasonable is changed simply into a concern to transmit beliefs. The difference between instructing and indoctrinating is a difference in the weight given to the pursuit of truth as opposed to the simple transmission of beliefs previously arrived at." (Green 1971, 30.)

Green's characterization falls under the heading of intentions as extrinsic aims. For a joint action, it is not possible for the pupil to consider or know the truth value or the reasonableness of beliefs, so his intention to participate in the action of indoctrination cannot be based on the value aspect of the intention. His reasoning relies on the we-ness of the agents who intend to perform a joint action, the aim of which is to bring about learning those beliefs. So the basic conditions can be claimed to be sufficient to satisfy the we-intention definition. This description does not allow the pupil to avoid being exposed to indoctrination.

The above division with reference to content, and to intention as an extrinsic aim, results in similar we-intendings, which do not permit the pupil to control the truth of the beliefs to be taught. Thus, they are not very good criteria for determining indoctrination. A more useful way is

to view it from the perspective of methods. If a method is interpreted as a technique, there will arise the question as to whether the use of a brutal technique in indoctrination should be called a joint action, which relies on the we-ness of the acting agents. Even from that perspective, it is justifiable to reject the technique sense of a method for an analysis of indoctrination.

When by a method is meant something like a procedure of handling knowledge in teaching, it becomes possible to define indoctrinating in relation to instructing. If in instruction we are concerned with transmitting evidential beliefs, in indoctrination we wish to transmit nonevidential beliefs. Since the evidence and reasons connected with beliefs are not taken as implicit assumptions but are explicitly stated in instruction, the procedure of exposing them will become a method of evidentially presenting beliefs in teaching. If beliefs are put forward nonevidentially, teaching will be indoctrinating.

It is sometimes claimed that indoctrination is based on transmitting false beliefs. This is clearly an incorrect assumption. Although we may refer to religious, political or scientific doctrines that do not represent our views, we cannot say that they are false. Such doctrines may be undesirable aims of teaching in our society, but that does not make them false as doctrines. As we saw above, the truth or falsehood of the contents of beliefs do not provide us with a criterion for indoctrination because it may be reasonable to believe what is false. Therefore, indoctrination can be transmitting true or false beliefs. The problem in indoctrination is that the pupil cannot decide for himself whether the particular belief is truthful. People who are taught a true belief through indoctrinating "will only know that it is a *correct belief*. That is to say, they will hold to certain true beliefs but will be unable to give adequate reasons for them, any clear account of them, or offer any sound defense of them beyond the logically irrelevant observation that they are commonly held beliefs." (Green 1971, 50.)

If the above discussion of indoctrination is accepted, we must see what implications it has for the we-intention. In instruction the pupil will participate in the joint action, knowing that beliefs are presented in an evidential manner. Therefore, in the action description the common goal is to bring about learning of knowledge or evidential beliefs. The additional condition of evidence and reasons logically leading to the conclusive belief is vital to the correct definition of instruction. So the pupil we-intends to bring about learning through instruction, given that the knowledge or beliefs are handled in an evidential manner. If the evidential manner is left out, the pupil we-intends to bring about learning of beliefs through indoctrination. He knows that the beliefs are indoctrinated because they are put forward in a nonevidential manner. This reasoning makes it possible for him to refuse to participate in an

action of indoctrination.

In contrast to the contents-criterion, the method-criterion provides the pupil with the possibility of preventing and protecting himself from the joint action of indoctrination. He can decide on the basis of the manner in which the beliefs are exposed to him whether he will do his part of the joint action. If he we-intends to do his part of the action, i.e. to bring about learning those beliefs, he will participate in the joint action of indoctrination. But if he does not we-intend to do that, the teacher will be left with indoctrinating as a single-agent action, which is not a joint action, i.e. a proper item of indoctrination. This reasoning may take place in practice, but the additional condition of bringing about learning of nonevidential beliefs must be incorporated in the definition of we-intention for indoctrination.

The reader may wonder why indoctrination is put in relation to instruction. The reason is simple: they both exemplify 'teaching that'. So it is only natural to analyze how they are related. If both terms refer to transmitting knowledge or beliefs, a criterion must be found that can be applied to both in the analysis. The only reasonable perspective is to view instruction and indoctrination in terms of methods. It would be incorrect to use one criterion in case of instruction and another in case of indoctrination, which is what has happened in some analyses.

Set against each other, we note that instruction and indoctrination are categorically exclusive concepts. Is one of them of primary meaning to the concept of teaching? An analysis based on the mere concepts may lead to the conclusion that none of them precedes even though the criterion of evidential beliefs is taken into account. We could very well speak of teaching beliefs, in the sense of nonevidential beliefs, although it is not particularly singled out through analysis. Likewise, instructing need not be distinguished as transmitting evidential beliefs. Nonetheless, when the concepts are viewed from the perspective of a joint action, we will notice a difference. If instruction is not defined before indoctrination, a pupil will have no possibility of reasoning on the basis of how beliefs are treated in the exposition. The additional condition of presenting beliefs nonevidentially is not available to his reasoning if he does not know that there exists a mode of presenting beliefs evidentially. Therefore, instruction is prior to indoctrination in terms of joint action.

When I say that the pupil can choose to participate in indoctrination, I do not mean that the concept of indoctrination is dependent on the factual reasoning. Conceptually, the pupil must we-intend to bring about learning of nonevidential beliefs for the concept of indoctrination to be satisfactory as a joint action. If he does not, there is no joint action of indoctrination. But factual reasoning may be directed to the adoption of nonevidential beliefs. In other words, although he participates in indoctrination in terms of the correct action description, he need not

commit himself to adopting the beliefs in the sense of a learning outcome. Here we see again how vital it is to separate a consequence from the result of an action description both conceptually and factually.

As we saw in connection with instruction, the pupil becomes aware of the truth or the reasonableness of knowledge or beliefs and, in a sense, learns, but that does not yet guarantee that it becomes part of his permanent memory. Practice and exercises are called for before the knowledge and beliefs are held as learning outcomes. Whether this happens depends on various biological, personal and environmental factors. By analogy, similar factors are involved if nonevidential beliefs are to be held through indoctrination. That is why the pupil is provided with the possibility of accepting or rejecting the nonevidental beliefs handled in the joint action of indoctrination.

I think it is an important observation that the pupil can decide for himself if he wants to participate in indoctrination. As a matter of fact, there are a lot of things that must be taught for one reason or another in an indoctrinative manner. The subject matter may be of such character that it does not easily lend itself to evidential presentation. Let me cite teaching a foreign language as an example. There are many features about the language that have to be adopted by rote. Lack of time may be another reason for neglecting to provide the pupils with evidence and reasons. So it is not perhaps so fundamentally negative to indoctrinate certain knowledge or beliefs, although it may often be unwise. It is apparent that many conventional beliefs and generally accepted values in a particular society are transmitted nonevidentially, without the teachers even being aware of it as a form of indoctrination.

7. Concluding remarks

The aim of this study was to analyze teaching and argue for its being a social concept. The procedure was to view teaching and learning in action language in order to elucidate the muddled concepts of teaching. The conceptual confusions have occurred as a concequence of conflating teaching with learning outcomes. Since both the teacher and the pupil are required for teaching to occur, the problem was then to explicate the interaction between the two agents who perform their componental actions in the teaching event. The bridge was built by means of the technical concept of we-intention, which accounts for the jointness of the different componental actions.

Contrary to the common belief that the pupils and the teacher all work jointly in institutionalized teaching, the analysis revealed that structural jointness prevails between the teacher and each pupil separately. The

pupils' componental actions are not dependent on each other's actions. Exceptions are such forms of teaching where the pupils must cooperate and work in pairs or groups. This conclusion shows that the minimum unit for the definition of teaching is two agents: the teacher and the pupil. In the most common cases, a class or a group of pupils taught together do not form social groups in terms of teaching, but consitute an extralogical concept if no other conditions are set for the groups.

The discussion of this paper has shown that the definition of we-intention in the concise form given for joint actions are satisfactory for actions at the level of intentional behaviour. It is clear that when only the term 'do *X*' is used in the definition, the inferences that are correctly made from the premises to the conclusion satisfy the definition. When the action consists of such intentional behaviour that displays intentions of more intelligent character, some additional conditions are called for. By giving the *X* in 'doing *X*' different interpretations, we can study the relevance of the definitions in terms of teaching. The analysis of the different modes of teaching revealed the need for additional conditions of truth and evidential belief in case of instruction. From this we can conclude that teaching also involves the method aspect, which attaches a value-laden attribute to it. This conclusion is not, however, meant to be in harmony with the standpoints that view the aim of what is good as an inherent part of the concept of teaching.

The interpretations of 'doing *X*' are also connected with what is taught. The question may be raised whether it is at all possible to speak of teaching without reference to it. The problem does not concern the aims of teaching but the nature of what is taught, which seemed to be of vital importance to the analysis of teaching. I think the above discussion has shown that even the we-intention must involve more specific conditions on the basis of what is taught. This conclusion suggests that it is ambiguous to speak of the philosophy of pedagogy in a generic sense unless what is taught is taken into consideration. Perhaps it might be useful to discuss pedagogical concepts within the pedagogy of various subject-matters. I am thinking of teaching such different school subjects as foreign languages, history, mathematics, arts, gymnastics and sports.

The essential concept for the analysis was we-intention, which was introduced to account for the teacher's and the pupil's joint action. It was emphasized that it serves as a technical concept for analysis. An empirical researcher may wonder whether we-intention corresponds to any empirical concept. I think it fundamentally can be linked with the agents' motivation and motivational influence. Psychological and pedagogical theories may be developed to account for what makes pupils participate in the joint action of teaching. Even though power and authority may be involved, the joint action is ultimately dependent on the pupils' willing freely to join the teaching action.

In the preceding analysis emphasis was put on the intentions and intendings to perform the actions as well as on the results of the teaching actions. Criticism might be raised against my discussion because specific analyses of the action types were omitted. Due to the vastness of the problem area, that was left to future research. The more essential thing was to find social action concepts that might be utilized to argue for teaching as a social concept. Regarding teaching as a social concept has important implications for the development of theories about factual and conceptual phenomena within pedagogy.

The importance of the social concept is seen in drawing distinctions between different phenomena. I shall show it by taking instruction as an example. There are factual instances of instruction which fail to display the bodily presence of a pupil agent in the social action at a particular point in time. For example, do we have an item of instruction when a teacher prepares and writes the material of instruction for distant learners, or teach-yourself material for public sale? A positive answer may be given to this, because the teacher cannot write materials of instruction without assuming a pupil as the learner of his materials. Of course there is no factual social action because the teacher performs his action on his own. But given the social concept of instruction, which is based on a social action, the instance may be conceptually considered an item of instruction. Similarly, the pupil who reads the material for learning, and who, in practice, works on his own and thus seems to act as a single agent, can conceptually be regarded as engaging in instruction. Thus the social concept of teaching reveals its advantage.

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